

Proposed Action and Alternatives

NEPA requirements for alternatives analysis (40 CFR 1502.14) direct federal agencies to consider a range of alternatives that could accomplish the agency's purpose and need and present the alternatives in comparative form to define the issues and provide a clear basis for decision makers and the public to choose among options. Five alternatives are considered in this EIS, as briefly described in Table 2-1. The No Action Alternative and the three action alternatives represent the reasonable range of alternatives to the Proposed Action. Key attributes of the No Action, Proposed Action, and three action alternatives are summarized in more detail in Table 2.7-1, found at the end of this chapter. Additional alternatives were considered; those eliminated from detailed evaluation are summarized in Section 2.6.

As required by NEPA, this EIS compares the Proposed Action and the other three action alternatives with the No Action Alternative. The No Action Alternative is the baseline against which the effects of all other alternatives are measured.

2.1 No Action (No Permit/No Plan)

This alternative has been developed to evaluate current conditions related to "no action" or "no project." Under the No Action Alternative, NMFS and USFWS would not issue Simpson and ITP or an ESP, and Simpson would not implement an AHCP/CCAA. As a result, Simpson would remain subject to the ESA's prohibitions on unauthorized take of listed species. Simpson would, however, continue to implement measures contained in its NSOHCP and associated Implementation Agreement that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and forest management operations.

Simpson would continue to conduct timber harvesting and related operations in the Action Area in accordance with existing state and federal regulations (as they exist on July 1, 2001) as well as operational and policy management actions currently being implemented by Simpson. The applicable regulations that provide the framework for implementing No Action elements are described in detail in Section 1.5.3. The practices and the ways in which they would continue to be applied as part of the No Action Alternative pursuant to existing laws and regulations where incidental take is not authorized are described in detail as components of the No Action Alternative in Sections 2.1.1 through 2.1.5, and include activities associated with the growing, harvesting, and transporting timber products on and off the property; conducting ancillary activities necessary to protect the property from fire, insects, disease, and vandalism; complying with various local, state, and federal laws and regulations that assess and seek to protect environmental resources (including listed fish and wildlife species); and voluntarily conducting research on wildlife and fish species and their habitats.

TABLE 2-1

Alternatives Analyzed in Detail in the Simpson AHCP/CCAA EIS

Title	Brief Description
No Action (No Permit/No Plan)	<ul style="list-style-type: none"> Continuation of Simpson's existing timber harvesting and forest management practices in the Action Area under existing regulations (see Sections 2.1.1 and 2.1.2) Continued application of existing measures for protection of fish and wildlife habitat (Section 2.1.3) Continued implementation of measures contained in Simpson's NSOHCP and associated IA that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and forest management operations Continued implementation of measures designed to avoid take of other listed species; continued implementation of other measures to mitigate or avoid significant impacts to unlisted species (Section 2.1.4 and 2.1.5)
Proposed Action	<ul style="list-style-type: none"> Continuation of existing operations pursuant to existing regulations, other applicable laws, and Simpson's NSOHCP, as augmented by the proposed AHCP/CCAA Conservation Strategy Incidental take coverage for three listed fish ESUs, three unlisted fish ESUs, two unlisted fish species, and two unlisted amphibians through issuance of an ITP by NMFS and an ESP by the USFWS AHCP/CCAA/ITP/ESP obligations for the covered species, to include: (1) fixed and variable RMZ/EEZ widths for Class I, II, and III watercourses; (2) implementation of road management plan, slope stability, and ground disturbance measures; and (3) effectiveness monitoring
Listed Species Only (Alternative A)	<ul style="list-style-type: none"> Same as the Proposed Action except for no incidental take coverage for unlisted species/ESUs and, consequently, more limited effectiveness monitoring
Simplified Prescription Strategy (Alternative B)	<ul style="list-style-type: none"> Continuation of existing operations pursuant to existing regulations, other applicable laws, and Simpson's NSOHCP, as augmented by an HCP/CCAA conservation strategy An HCP/CCAA would be implemented for the same fish and wildlife species covered by the Proposed Action, and an ITP/ESP would be issued for those species. AHCP/CCAA/ITP/ESP obligations for the covered species modify obligations incurred under the Proposed Action and include fixed, no-cut riparian buffer widths for Class I and II watercourses on the fee-owned lands of the Action Area.
Expanded Species/Geographic Area (Alternative C)	<ul style="list-style-type: none"> Same as Proposed Action except for: (1) an expanded area of Action Area coverage to include an additional 26,116 acreage of rain-on-snow areas; (2) incidental take coverage for three listed fish ESUs, three unlisted fish ESUs, two unlisted fish species, one listed fish species, four unlisted amphibians, one unlisted reptile, and two listed bird species through issuance of ITPs by NMFS and the USFWS; and (3) modifications to the HCP/ITP obligations that include additional species-specific measures

2.1.1 Simpson's Timber Harvesting and Forest Management Activities

Descriptions of the major activities associated with Simpson's management of its lands under this alternative are provided below:

- Harvesting and transporting timber
- Timber stand regeneration and improvement
- Fire prevention and suppression activities
- Road and landing construction, reconstruction, and maintenance
- Monitoring and research activities

2.1.1.1 Harvesting and Transporting Timber

Simpson manages its forestlands for the primary purpose of growing and harvesting timber that subsequently will be milled to produce various commercial wood products. As specified in its "Option (a)" document, Simpson has implemented a schedule and rate of tree harvesting that seeks to balance timber harvesting with replacement tree growth.

Lands within Simpson's northern California ownership are generally managed under even-aged silvicultural prescriptions; this would continue under the No Action Alternative. These areas would be replanted with seedlings, or regenerated by seed from residual trees left on site. In accordance with the CFPRs and Simpson's operating guidelines, even-aged regeneration harvests must not exceed 40 acres. Harvesting of timber within even-aged units with stand age classes of 50 years or greater would be implemented under this alternative.

Historically, uneven-aged management has been focused: (1) in and around watercourse and lake protection zones and water supply areas; (2) along or around visually sensitive road and highway corridors; (3) around nest site locations of selected bird species (e.g., northern spotted owls); (4) within some demonstration units upslope of riparian and watercourse protection corridors; (5) generally near property lines where neighborhoods exist; and (6) in geologically unstable areas that are identified for special protection. Under the No Action Alternative, uneven-aged management would continue to be focused in these areas, and would be accomplished by marking and removing individual trees or small groups or clusters of trees. Cutting cycles (the number of years between two successive harvest entries into the same stand) in uneven-aged stands on Simpson lands under this alternative would be 10 to 50 years.

No harvesting would occur within 39 set-aside areas identified in Simpson's NSOHCP for purposes of promoting suitable owl habitat following harvesting in other areas. Combined, the 39 set-asides contain 13,242 acres, and range from 100 to 2,000 acres in size.

Chainsaws and feller-bunchers are currently used for all tree felling and log bucking activities, but other types of mechanical felling and bucking equipment could be used under this alternative. Where possible, log yarding on Simpson lands would continue to be accomplished using cable logging systems. Tractor operations would generally be confined to stands that occur on slopes of less than 40 to 45 percent, depending on proximity to other environmentally sensitive areas (e.g., unstable slopes) and variability of terrain. Tractor operations also would be limited to dry months (May 1 through October 15), except for

circumstances and locations defined in a winter operating plan. Pursuant to the CFPRs, tractor operations would not be conducted on:

- Unstable areas
- Slopes greater than 65 percent
- Slopes greater than 50 percent that have a high or extreme erosion hazard rating
- Slopes greater than 50 percent that lead without flattening to sufficiently dissipate water flow and trap sediment before reaching a watercourse or lake

Helicopters would be used within isolated (i.e., difficult to access) harvesting units to yard downed timber where road and landing access would otherwise traverse extremely steep, sensitive, or unstable topography where a high risk of road/landing failure exists.

Helicopters would also be used to gain access to isolated timber stands in areas where extremely risky and difficult stream crossings exist.

Both heel-boom and wheeled front-end loaders would be used in conjunction with log yarding, sorting, and loading activities on landings. Log trucks would be used to transport logs to a mill for further processing.

2.1.1.2 Timber Stand Regeneration and Improvement

Consistent with its sustained yield objective, Simpson would continue to rely on non-intensive as well as intensive timber management techniques to maximize growth and yield on its lands. Current management practices for regenerating harvested stands and promoting their growth would continue to be implemented under this alternative. These practices would include a variety of activities, such as site preparation, tree planting and occasional seeding, fertilization, precommercial and commercial thinning, pruning, prescribed burning, and cone collecting. The level and degree to which these practices would be used would depend on the regeneration method for a particular harvest unit (e.g., even-aged vs. uneven-aged harvest), the amount of basal area remaining after harvesting in uneven-aged units, proximity to special treatment areas (e.g., WLPZs and nest site buffer areas), and the post-harvest existence of special elements (e.g., large trees) requiring protection.

Site Preparation

Site preparation on Simpson forestlands could entail broadcast burning of entire harvesting units for purposes of removing concentrations of logging slash and other debris, reducing herbaceous competition, and exposing mineral soil to provide greater planting or seeding access to the site. Elimination of larger slash and debris would also eliminate potential fuel for wildfire, thereby reducing the fire hazard during the life of the future stand. Control of existing unwanted vegetation may also be facilitated through use of contact and translocated herbicides. All herbicides and adjuvants used on Simpson forestlands would continue to be registered with the EPA. Harvested units are usually burned in early fall to mid-winter months after slash and/or competing vegetation has thoroughly dried and a significant amount of rain has fallen to minimize the risk of uncontrolled fires. Burning is also conducted in early spring before fuels dry excessively. Under this alternative, these practices would continue and would be implemented in accordance with local air quality regulations. Broadcast burning would be concentrated on even-aged regeneration units; brush piles could also be used in uneven-aged areas. Pursuant to Simpson's NSOHCP,

however, burning limitations would apply adjacent to set-aside and other sensitive owl habitat retention areas (e.g., WLPZs).

Planting

As part of its plan to obtain successive crops of trees from its lands on a sustained yield basis, Simpson would continue to replant each even-aged harvesting unit with approximately 300 to 500 redwood and Douglas-fir seedlings per acre in the first planting season (winter) after harvesting is completed. Seedlings would be planted 10 to 12 feet apart. Many regenerated areas would contain at least 1,000 seedlings per acre two years after planting, reflecting the effects of adjacent seed fall and redwood stump sprouting. Pursuant to the CFPRs, stocking surveys would be conducted after the first and second growing season to ensure that all replanted areas have the proper number and distribution of trees. If a survey indicates that the number or distribution of trees is not adequate, the area would be replanted to achieve desired results.

For uneven-aged regeneration units where single tree and group selection are employed, interplanting of coniferous species could occur. These areas would generally be planted with tree species representative of the original stand and in numbers necessary to meet stocking requirements.

Vegetation Control and Stand Growth Enhancement

Simpson would continue to strive for a long-term stocking level of approximately 100 to 200 trees per acre, with a species composition similar to that previously occupying the site. In order to effect maximum growth in the shortest period of time, newly established stands may receive a variety of treatments subsequent to planting. These treatments would generally be initiated at the end of the second growing season and continue until the stand is approximately 35 years of age, and include chemical treatment of invasive and competing brush and herbaceous species, as well as precommercial and commercial thinning of overstocked stands. Depending on growth performance, stands may also be fertilized to enhance growth.

Pruning and Cone Collection

Some pruning activity would continue to occur under this alternative. Cone collection activities would also continue in both even-aged and uneven-aged stands under the No Action Alternative.

Fire Prevention and Suppression

Under the No Action Alternative, fire prevention would continue to be practiced by Simpson when and where necessary. This would include removal of logging slash from forestlands within 100 feet of public roads, control of public access to the forest, limitation or suspension of harvesting activities during periods of high fire danger, and prescribed burning for purposes of reducing fuel loads on the forest floor.

Fire suppression activities might also be required periodically to fight fires. Depending on the location and characteristics of a particular fire, these activities would be supervised by CDF or the U.S. Forest Service as necessary and might include constructing firelines by hand or bulldozer, lighting backfires, applying aerial fire suppressants, and felling trees or snags.

2.1.1.3 Road and Landing Construction, Reconstruction, and Maintenance

New road and landing construction might involve timber felling and removal in the road or landing right-of-way. Construction and major reconstruction activities might include excavation, filling, realignment, and recontouring of roads; installation of erosion control facilities and structures; dust abatement; road surface enhancement, such as rocking; and soil stabilization.

All new roads and landings would be constructed in accordance with practices specified in the CFPRs plus additional Simpson operational policies and guidelines. The location, design, timing, and construction standards of new (and upgraded) roads and landings would be generally governed by the techniques described in Weaver and Hagans (1994). In accordance with the CFPRs, new roads (other than necessary crossings) and landings would be located and constructed upslope of all watercourses and outside WLPZs, except for stream crossings and unless justified on a site-specific basis in a THP. Culverts, bridges and/or occasional fords would be placed or constructed at all watercourse crossings, and would generally be designed to withstand 100-year flood events and to allow for unrestricted fish passage. Where feasible, bridges would be installed on fish-bearing streams. When a bridge installation is not feasible, a countersunk or bottomless culvert or other “fish-friendly” structure would be installed to provide for upstream and downstream fish passage. Installed culverts would not restrict the active channel flow. Construction or reconstruction of logging roads, tractor roads, and landings would not take place during the winter period, unless otherwise provided for under a winter operating plan.

Erosion control structures and facilities (e.g., ditch relief culverts and/or rolling dips) would be installed at maximum spacing intervals suggested by Weaver and Hagans (1994), as modified by Simpson. Maximum spacing intervals would range from 115 to 600 feet on the basis of a “two percent” stratification of road grade classes and associated erosion hazard ratings (see Section 6.2.3.6.12 of the AHCP/CCAA.) Pursuant to the CFPRs, the construction, reconstruction, maintenance, and use of roads and landings in conjunction with timber operations on steep slopes and within WLPZs would be restricted during wet weather periods and on unstable terrain. Additional restrictions could be applied on a site-specific basis prior to timber harvesting.

Road and landing construction, reconstruction, and maintenance frequently require the application of water to road and landing surfaces. Under this alternative, water would be provided by water trucks that pump water from streams, reservoirs, lakes, and ponds located on Simpson forestlands. Occasionally, specific locations within or adjacent to watercourses would be excavated or dammed to increase the in-channel storage area for drafting purposes. These activities would be subject to approval from CDFG pursuant to CDFG’s streambed alteration regulatory program. Under the No Action Alternative, Simpson would continue to pump water from these sources as permitted by law. Road and landing construction, reconstruction, and maintenance may also involve the surfacing of soil roads with rock, lignin, pavement, or other surface treatments. These alternative road surface treatments would also continue as necessary under the No Action.

Historically, road and landing construction, reconstruction, and maintenance within areas outside of THP boundaries have generally occurred in an opportunistic manner to take advantage of the proximity of current THP operations and heavy equipment availability

within the local area. Some activities, on the other hand, such as control of roadside vegetation, have required preparation and implementation of long-term plans. These practices would continue under the No Action Alternative.

Currently, approximately 2,000 miles of road exist and are in active use on the Simpson ownership. Under the No Action Alternative, there would be a slight net increase in the total number of miles of newly constructed road over the next 50 years; the number of miles of new road construction would exceed the number of miles of roads abandoned. Simpson would continue its existing practice of decommissioning non-management roads, and fixing road-related sediment sources, where they are appurtenant to THPs being operated by Simpson. Where road decommissioning is part of the THP, the process would occur in accordance with procedures outlined in the CFPRs and techniques described in Weaver and Hagans (1994). Road and landing abandonment would include the removal of culverts and soil stabilization as necessary.

Simpson has estimated the volume of potential sediment associated with high- and moderate-risk sediment delivery sites (based on both the probability of delivery to watercourses and the sediment volume associated with such delivery) to be 6,436,000 cubic yards. Under the No Action Alternative, fewer than 1,300,000 cubic yards of sediment would be removed during the first 15 years of the permit term.

Under the No Action Alternative, Simpson would continue to voluntarily implement a biannual training program for equipment operators and supervisors on proper road and landing construction, upgrading, maintenance, and decommissioning practices with an emphasis on practical, effective erosion and sediment control.

Key differences between CFPR requirements and Simpson operational guidelines and policies as implemented under the No Action Alternative are summarized in Table 2.1-1 below.

TABLE 2.1-1

Standard CFPR Requirements Compared to Simpson Road Construction, Reconstruction, and Maintenance Guidelines under the No Action Alternative

CFPR Requirements	Simpson Guidelines under the No Action Alternative
Implementation of prescriptive road construction, reconstruction, maintenance, and decommissioning standards contained in the CFPRs for all roads appurtenant to THP project areas.	CFPR requirements plus implementation of additional best management practices (BMPs) based on techniques described in Weaver and Hagans (1994).
No method contained in the CFPRs for assessing and prioritizing low-, moderate-, and high-risk sediment delivery sites on roads.	Utilization of a formal methodology for assessing and prioritizing low-, moderate-, and high-risk sediment delivery sites on roads. Methodology is based on watershed sensitivity and basin resource issues (e.g., TMDLs), and proposed THP activity within the watershed.
On-site review of road and landing construction, upgrading, maintenance, and decommissioning standards and prescriptions contained in individual THPs required of equipment operators and supervisors. No other periodic training program required for equipment operators and supervisors on proper road and landing construction, upgrading, maintenance, and decommissioning practices.	CFPR requirements plus biannual informal training program for equipment operators and supervisors on proper road and landing construction, upgrading, maintenance, and decommissioning practices.

TABLE 2.1-1

Standard CFPR Requirements Compared to Simpson Road Construction, Reconstruction, and Maintenance Guidelines under the No Action Alternative

CFPR Requirements	Simpson Guidelines under the No Action Alternative
Installation of waterbreaks on logging roads at maximum spacing intervals ranging from 50 to 300 feet on the basis of a “15 percent” stratification of road grade classes and associated erosion hazard ratings.	Installation of ditch relief culverts and/or construct rolling dips on logging roads at maximum spacing intervals ranging from 115 to 600 feet on the basis of a “two percent” stratification of road grade classes and associated erosion hazard ratings.
Installation of bridges not required. Requires that drainage structures on Class I watercourses shall allow for unrestricted passage of all life stages of fish or listed aquatic species that may be present.	Installation of bridges on Class I watercourses where economically feasible; installation of a countersunk or bottomless culvert (or other fish-friendly structure) where bridge installation is not possible on Class I watercourses.
Design of drainage structures and facilities on logging roads so as to not discharge on erodible fill or other erodible material unless suitable energy dissipators are used. No minimum distance requirement from Class I or Class II watercourses indicated.	Design of ditch drains so as to effect discharge 50 to 100 feet before water enters a Class I or Class II watercourse.
Treatment of areas of bare mineral soil exceeding 800 continuous square feet exposed by timber operations within the WLPZ of Class I or II waters (or Class III waters if an ELZ or WLPZ is required). Protection measures may include seeding, mulching, or replanting, but specific treatments, seeding rates, and minimum mulching depths are not specified.	Seeding and mulching of all new road cut and fill slopes, exposed slopes associated with temporary stream crossings, and any other management-induced ground disturbance larger than 100 square feet (except hand-constructed firelines) within the WLPZ of a Class I or II watercourse at a seeding rate of 30 lbs/acre (or 20 lbs/acre if Simpson seed mix is used) and a mulching depth of 2 inches with 90 percent coverage.

2.1.1.4 Monitoring and Research Activities

As part of the THP process and other regulatory regimes, including the NSOHCP, Simpson conducts a number of research and monitoring activities. These include compliance and effectiveness monitoring, wildlife surveys, environmental assessments and watershed studies (e.g., in the TMDL context).

2.1.2 Simpson's Other Operations and Activities

In addition to forest management operations noted above, other activities would be undertaken by Simpson and by third parties pursuant to Simpson authorization (e.g., leases, easements, and licenses) under this alternative. Such activities would be consistent with the zoning of Simpson's lands as TPZ. Under California's Timberland Productivity Act, TPZ zoning is for growing and harvesting of timber and for designated “compatible uses.” Compatible uses on the Simpson forestlands include:

- Commercial and non-commercial development and use of local rock pits and quarries
- Water use
- Harvesting and transportation of minor forest products
- Public recreation activities

- Watershed, fish and wildlife enhancement and monitoring
- Administrative and non-timber related use of roads, landings, and equipment fords

2.1.2.1 Rock Pits and Quarries

Under the No Action Alternative, Simpson would quarry rock from several rock (borrow) pit locations throughout its ownership to obtain road surfacing or filling material. These pits would typically be smaller than 2 acres. Because these pits would be excavated for purposes of road construction and maintenance associated with timber harvesting and forest management and are located more than 100 and 75 feet from Class I and Class II watercourses, respectively, they would be exempt from regulation under the Surface Mining and Reclamation Act (SMRA) as administered by the California Division of Mines and Geology.

Simpson would also continue extracting instream gravel from several locations throughout the ownership in compliance with permitting requirements of the CDFG.

2.1.2.2 Water Use

On-site facilities rely on water delivery from many reservoirs, lakes, and ponds located on Simpson forestlands. Under the No Action Alternative, Simpson would continue to pump water from these sources.

2.1.2.3 Minor Forest Products

Minor forest products (e.g., firewood, burls, poles, stumps, and split wood products) are currently harvested from and transported over Simpson lands in accordance with Simpson and state law permitting requirements. These products are either removed from and transported over Simpson lands in conjunction with active timber harvesting activities or removed from inactive landings subsequent to cessation of timber harvesting operations during non-winter operating periods. These activities would continue under this alternative.

2.1.2.4 Public Recreation

Simpson currently provides recreational opportunities on its forestlands to some groups and individuals, subject to a written entry permit. Entry for these activities, which include hunting, fishing, camping, picnicking, hiking, motorcycle use and target shooting, are permitted on a limited basis within specified areas. Under the No Action Alternative, Simpson would continue to provide these recreational opportunities subject to Simpson's discretion and its permitting requirements.

2.1.2.5 Voluntary Watershed, Fish and Wildlife Enhancement, and Monitoring

Under the No Action Alternative, Simpson may continue to conduct voluntarily, or allow the conduct of, various watershed, fish, and wildlife management activities for the enhancement or monitoring of watershed, wildlife, and fisheries resources. Examples of activities that could be conducted include:

- Aquatic habitat enhancement (e.g., instream boulder or large woody debris placement)
- Activities associated with improving fish passage (e.g., fish ladder construction or repair, culvert replacement or improvement, blockage removal)

- Instream surveys and sampling of fish (including spawning surveys and downstream migrant trapping), aquatic habitat conditions, macroinvertebrates, and water quality

2.1.2.6 General Maintenance and Administrative Use of Road and Landings

General maintenance and administrative use of roads on the Simpson ownership is an ongoing, year-round activity that may occur in the absence of timber harvesting operations. Specific maintenance routines are not different from those outlined above for timber harvesting operations, except that they do not require coverage under a THP or other regulatory regime. Such general maintenance and administrative use would continue under the No Action Alternative.

2.1.3 Fish and Wildlife Habitat

This section summarizes the practices and regulatory requirements that would be implemented by Simpson (that have the potential to affect fish and wildlife habitat) under the No Action Alternative. Practices specific to key components and elements of fish and wildlife habitat, such as riparian habitat, large woody debris, snags, and hardwoods, are described.

2.1.3.1 Riparian Habitat

Measures that would be implemented under the No Action Alternative for riparian habitats adjacent to Class I, II, and III watercourses, plus ponds, swamps, seeps, springs, and bogs, are described in detail below, but could be modified and expanded on the basis of site-specific individual and cumulative effects analyses during THP preparation.

Class I Watercourses

Existing CFPRs require the establishment of WLPZs immediately adjacent to streams and lakes. Under the No Action Alternative, standard minimum zone widths for Class I (fish-bearing) watercourses are 150 feet, and can be increased depending on the percent slope of areas immediately upslope of these streams. Pursuant to Simpson's NSOHCP, Simpson widens WLPZs immediately adjacent to Class I watercourses wherever possible to take advantage of natural conditions.

Within a Class I WLPZ, at least 85 percent overstory canopy would be retained within 75 feet of the watercourse or lake transition line; at least 70 percent overstory canopy would be retained within the remainder of the WLPZ. The residual overstory canopy after timber harvesting would be composed of at least 25 percent of the overstory conifers existing prior to harvesting. Under No Action, this requirement would be augmented by additional measures identified in the Simpson NSOHCP that provide for retention of a variety of tree sizes (height and diameter) and species within WLPZs, with priority given to wildlife habitat trees. Within Class I WLPZs, at least 75 percent surface cover and undisturbed area would be retained after harvesting to act as a sediment filter strip, to dissipate raindrop energy, and to provide wildlife habitat. In addition, where an inner gorge extends beyond a Class I WLPZ and slopes are greater than 55 percent, a special management zone would be established where the use of even-aged regeneration methods would be prohibited.

Single tree selection harvesting would be Simpson's preferred harvesting method within the WLPZ of Class I watercourses. Use of heavy equipment for timber felling, yarding, or site

preparation would be prohibited within the WLPZ except at prepared tractor road crossings or at existing or new road crossings approved by CDF and CDFG.

The 10 largest dbh conifers (living or dead) per 330 feet of stream channel would be retained within 50 feet of Class I watercourses to provide future instream large woody debris. Simpson would retain a variety of tree sizes (height and diameter) and species within Class I WLPZs, with priority given to wildlife habitat trees and down woody material.

In addition to prescriptive measures, the design of site-specific measures within Class I WLPZs by Simpson foresters, as well as review of these measures by a multi-disciplinary review team, would be included in the No Action Alternative (see Section 1.5.3.1).

Class II Watercourses

Watercourse and lake protection measures for streams where aquatic habitat exists for non-fish aquatic species (Class II) would include minimum, variable WLPZ widths of 50 to 100 feet, depending on the adjacent hillslope gradient and associated erosion hazard rating. At least 50 percent total canopy closure would be retained subsequent to any commercial harvesting. However, at least 70 percent minimum total canopy closure would be retained post-harvest where it exists within the WLPZ prior to timber harvesting. Pursuant to Simpson's NSOHCP, Simpson would widen WLPZs immediately adjacent to Class II watercourses wherever possible to take advantage of natural conditions and on the basis of site-specific review where other special circumstances (e.g., geologic instabilities) warrant.

Existing regulations require that the residual overstory canopy after timber harvesting be composed of at least 25 percent of the overstory conifers existing prior to harvesting. This requirement would be augmented by additional measures identified in the Simpson NSOHCP that provide for retention of a variety of tree sizes (height and diameter) and species within WLPZs, with priority given to wildlife habitat trees. Within Class II WLPZs, at least 75 percent surface cover and undisturbed area would be retained after harvesting to act as a sediment filter strip, to dissipate raindrop energy, and to provide wildlife habitat.

Single tree selection harvesting would be Simpson's preferred harvesting method within the WLPZ of Class II watercourses where more than 50 percent canopy exists prior to timber operations. Use of heavy equipment for timber felling, yarding, or site preparation would be prohibited within the WLPZ except at prepared tractor road crossings or at existing or new road crossings approved by CDF and CDFG. At least two living conifers per acre, measuring at least 16 inches dbh and 50 feet tall, would be retained within 50 feet of Class II watercourses to provide future instream large woody debris.

Class III Watercourses

Protection for Class III streams where no aquatic life is present but the stream is capable of transporting sediment to a Class I or Class II watercourse would include establishing 25- to 50-foot ELZs, depending on the adjacent hillslope gradient and associated erosion hazard rating. To the extent allowed by existing regulations, timber harvesting would still continue in ELZs, within which heavy equipment use would be limited. All trees within the Class III channel or that are needed for bank stability would be retained. Under some circumstances, WLPZs could be established for Class III watercourses in lieu of ELZs. WLPZ widths and WLPZ protection measures for Class III watercourses would be determined from a joint on-site inspection by Simpson foresters and the THP review team. In the event a WLPZ is designated for a Class III watercourse, at least 50 percent of the understory vegetation

present before timber operations would be retained as cover subsequent to any commercial harvesting. Even-aged management would be Simpson's preferred regeneration method within the ELZ of Class III watercourses; these areas are replanted subsequent to harvesting.

Ponds, Swamps, Bogs, and Seeps

Ponds, swamps, bogs, and seeps would receive Class II protection as described above. Springs would also receive Class II protection provided that they contain habitat for non-fish aquatic species.

2.1.3.2 Large Woody Debris

Although existing regulations do not provide retention standards for large woody debris (LWD), LWD issues are analyzed and addressed in the individual and cumulative effects analysis in THPs. Simpson currently retains some existing LWD on the forest floor. Merchantable sections of some downed logs or trees are periodically subject to salvage. Stumps, on the other hand, are not removed except where clearing is required for road and landing construction, and in these cases stumps are left on-site. Where stumps are removed, they are often stock-piled for use in stream restoration work. Salvage operations not related to a THP might also occur after major storms or fires; then, high-quality old-growth logs might be salvaged. There would, however, be no salvage allowed within the WLPZ of a Class I and Class II watercourse. Outside of a Class I or Class II WLPZ, all merchantable sections of downed trees would be salvaged, unless site-specific reasons dictated otherwise. All snags that are felled (including those intentionally felled for safety) would also be salvaged. Stumps and cull sections of downed trees would not be salvaged. Under the No Action Alternative, this general salvage policy would continue to apply to all silvicultural treatments covered by a THP, except within WLPZs adjacent to Class I and Class II watercourses.

Under the No Action Alternative, some large, downed woody debris would be depleted as a result of broadcast burning of some even-aged units subsequent to timber harvesting. These units would be burned to facilitate planting and natural seeding. The frequency of broadcast burning would be relatively low; less than 40 percent of harvested even-aged areas would be burned each year. If such a depletion occurs, it would be addressed in the regular cumulative effects analysis of the THP.

2.1.3.3 Snags

Under this alternative, Simpson would, in general, retain all snags greater than 16 inches dbh and greater than 50 feet tall that are not merchantable and that do not pose a safety or fire hazard. Under this alternative, future recruitment of snags would occur through the retention of old-growth elements in the 39 set-aside areas, minimum overstory canopy retention standards within the WLPZ of Class I and Class II watercourses, and retention of a variety of tree sizes and species within WLPZs as noted above. Snags would also be recruited pursuant to species-specific measures noted below for listed species.

2.1.3.4 Hardwoods

Under the No Action Alternative, Simpson generally would not harvest hardwoods in WLPZs. Under special circumstances, Simpson might remove hardwoods in WLPZs to enable conifer regeneration, enhance riparian function, establish cable corridors for timber

harvesting operations, or for safety. Outside of WLPZs, Simpson would retain hardwoods in all uneven-aged silvicultural areas, except where they may impede the regeneration of conifers (see below). Simpson's tree retention standard in even-aged management units would be one to two trees per acre. When hardwoods occur in THPs, Simpson would retain them in range of diameter classes and would attempt to retain them in equal ratio to conifers. In hardwood dominated stands, two merchantable hardwood trees per acre would be retained in even-aged management units following timber harvesting. In all harvested areas, hardwood trees that show evidence of substantial wildlife use (i.e., whitewash, acorn granaries, old raptor nests, etc.) or that repeatedly provide a superior crop of acorns would also have priority for retention.

As has occurred in the past, Simpson would continue under the No Action Alternative to remove hardwoods where they impede the regeneration of conifers; removal would be subject to the retention standards noted above. Simpson may take measures to reduce the competitive influence of tanoak and madrone in stands where hardwood competition threatens the survival of the conifer seedlings. These species would be treated with herbicides or, sometimes by mechanical means, as noted above. Simpson would not use herbicides within WLPZs along Class I and Class II watercourses or within the ELZs (or WLPZs) of Class III watercourses where water is present.

2.1.4 Measures to Protect Federal and State Listed Species

Under the No Action Alternative, Simpson would remain subject to existing regulatory requirements and would continue to implement its existing operational practices. Simpson would remain subject to the prohibition on unauthorized taking of state and federally listed species as well as the provision of the CFPRs that no THP may be approved that would result in the unauthorized take of a listed species. The only exception to the applicability of the take prohibition would continue to be the northern spotted owl, which is covered by an HCP/ITP issued to Simpson previously and is discussed in more detail below. Further, Simpson would remain subject to the state law regulatory requirements to avoid or mitigate significant adverse impacts of timber harvesting on all wildlife, including species listed or proposed for listing under the federal and state ESA. State and federally listed species known to occur on or in the vicinity of the Simpson ownership in northern California are the coho salmon (Southern Oregon/Northern California Coast ESU), chinook salmon (California Coastal ESU), steelhead (Northern California ESU), American peregrine falcon, bald eagle, bank swallow, little willow flycatcher, marbled murrelet, northern spotted owl, and western snowy plover. The tidewater goby is not known to occur on the Simpson ownership, but can be found in lagoons locally.

2.1.4.1 Coho Salmon, Chinook Salmon, and Steelhead

The coho salmon (Southern Oregon/Northern California Coast ESU), chinook salmon (California Coastal ESU), and steelhead (Northern California ESU) are listed as threatened under the federal Endangered Species Act (ESA). Under the No Action Alternative, Simpson would remain subject to the prohibition on unauthorized take of these species and other fish species listed (or proposed for listing under state law) in the future. Measures presently include implementation of watercourse and lake protection and other operational guidelines. Further, Simpson would incorporate site-specific measures, developed by

Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take.

2.1.4.2 Tidewater Goby

The tidewater goby is listed as endangered under the federal ESA, and occur primarily in shallow lagoons and lower stream reaches in the Action Area where waters are brackish to fresh and fairly slow moving. Under the No Action Alternative, Simpson would remain subject to the prohibition on unauthorized take of these species. Measures presently utilized include implementation of watercourse and lake protection and other operational guidelines. Further, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take.

2.1.4.3 American Peregrine Falcon

The peregrine falcon is listed as endangered under the California Endangered Species Act (CESA). Five peregrine falcon nest sites have been documented on or near Simpson lands. Under the No Action Alternative, Simpson would implement CFPRs prescriptive protection measures specific to the species and incorporate into THPs site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts. At a minimum, Simpson would not harvest timber or conduct other tree removal, road construction, reactivation of closed roads, or gravel extraction within a minimum 10-acre buffer immediately surrounding active (occupied within the last 5 years) nests of the peregrine falcon. This restriction would be in effect between February 1 and April 1 and would be extended to July 15 for occupied nests. The 10-acre buffer could be increased to 40 acres, where appropriate, pursuant to discussions with CDFG. Simpson would not conduct helicopter yarding of timber within 0.5 mile of active nests between February 1 and April 1, or within 0.5 mile of occupied nests between February 1 and July 15. At other times of the year, Simpson would avoid the direct felling or limbing of individual trees near nest-site habitat if the trees served a habitat function for peregrine falcons.

2.1.4.4 Bald Eagle

Bald eagles are listed as threatened under the federal ESA and endangered under CESA. Two bald eagle nest sites and frequent winter use in all major drainages have been documented on Simpson lands. Under the No Action Alternative, Simpson would remain subject to the take prohibition for this species. If bald eagles are found nesting on or within 0.25 mile of Simpson lands, Simpson would implement CFPR prescriptive protection measures specific to the species and incorporate into THPs site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts. At a minimum, Simpson would not harvest timber or conduct other tree removal, road construction, reactivation of closed roads, or gravel extraction within the best 10 to 40 acres of suitable nest-site habitat around active, occupied nests of the bald eagle. This restriction would be in effect from January 15 until August 15, or until 4 weeks after fledging. Simpson would not conduct helicopter yarding of

timber within 0.25 mile of active, occupied nests of the bald eagle during that time. At other times of the year, Simpson would avoid the direct felling or limbing of active nest trees, designated perch trees, screening trees, and replacement trees. Clear-cutting would not be allowed within the 10- to 40-acre buffer zone.

2.1.4.5 Bank Swallow

The bank swallow is listed as threatened under CESA. Bank swallows have not been observed on the Simpson ownership. Under the No Action Alternative, however, if bank swallows were found on Simpson lands, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.1.4.6 Little Willow Flycatcher

The little willow flycatcher is listed as endangered under CESA. One willow flycatcher breeding site is known to occur in the Klamath region of Simpson's ownership. Under the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.1.4.7 Marbled Murrelet

The marbled murrelet is listed as threatened under the federal ESA and endangered under CESA. From past surveys, the marbled murrelet is known to occur in a number of residual old-growth stands in the Klamath region and one second-growth stand with residual structure in the Little River drainage on the Simpson's ownership. Portions of adjacent lands in public ownership, such as the Redwood National and State Parks, lies within the area designated as marbled murrelet critical habitat by the USFWS.

Under the No Action Alternative, Simpson would implement measures designed to avoid take of marbled murrelets and mitigate or avoid significant environmental impacts. Timber harvesting or road construction would not occur within stands of suitable habitat unless future surveys approved by the USFWS and CDFG demonstrated the stands were not occupied. Seasonal restrictions on timber harvesting and other potentially disturbing activities would be effected within 0.25 mile of suitable nesting habitat on Simpson's lands and adjacent ownerships during the marbled murrelet nesting season (April 1 through September 15), unless surveys demonstrated that murrelets were not actively nesting in the stands during a given year. Simpson would implement CFPR prescriptive measures specific to marbled murrelets and incorporate into THPs site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental effects.

2.1.4.8 Northern Spotted Owl

The northern spotted owl is listed as threatened under the federal ESA. Since surveys for northern spotted owls were initiated on Simpson lands in 1989, over 200 northern spotted owl nest sites or activity centers have been identified throughout its ownership in northern

California. Under the No Action Alternative, Simpson would continue to comply with measures contained in its NSOHCP and associated Implementation Agreement that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and management operations. Pursuant to the NSOHCP, Simpson would continue to implement a four-point conservation program that includes (1) habitat management and nest protection, (2) a spotted owl research program, (3) establishment of set-asides and special management areas in selected habitat areas, and (4) employee/contractor training.

Under the No Action Alternative, habitat management and nest site protection measures would be implemented primarily through the THP process. Simpson would use its NSOHCP to guide the development of individual THPs. Timber harvesting would be planned and implemented to: (1) protect spotted owl nest sites during the nesting and fledging season; (2) maintain suitable foraging, roosting, and nesting habitat on Simpson's property; and (3) accelerate the development of replacement habitat following harvesting.

Surveys for spotted owls would continue pursuant to protocols identified in the NSOHCP. Banding and monitoring of spotted owls would continue where appropriate to facilitate population estimates and to gather additional demographic information.

To protect existing owl sites in select areas for purposes of avoiding take and promoting development of suitable owl habitat following harvesting, Simpson would continue to not harvest timber in 39 set-aside areas. In addition, a separate "special management area" would continue to be monitored in which no take of spotted owls would be allowed.

2.1.4.9 Western Snowy Plover

The western snowy plover is listed as threatened under the federal ESA. Western snowy plovers are known to nest on some of Simpson's coastal property between the Mad River and Redwood Creek, as well as one gravel bar in the Van Duzen drainage. Under the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.1.5 Measures for Other Species

Simpson would implement measures designed to avoid or mitigate potentially significant impacts to other species under the No Action Alternative in various ways, including implementing nest protection measures for several unlisted species considered "sensitive" by the Board of Forestry. Sensitive species include the osprey, northern goshawk, golden eagle, great blue heron, and great egret. These species-specific measures would continue to be implemented under the No Action Alternative. In addition, Simpson's THPs would identify significant reductions in the amount and distribution through harvesting of late-successional forest stands, as well as site-specific or general measures that would mitigate significant adverse impacts to fish and wildlife associated with these stands. These practices would be in addition to other direct and indirect general measures relating to riparian habitat, watercourse and lake protection, and snag retention. In addition, Simpson would remain subject to state and federal laws, such as the Migratory Bird Treaty Act, Bald Eagle and Golden Eagle Protection Act, and the prohibitions on taking of certain raptors pursuant to Sections 3503.3 and 3511 of the California Fish and Game Code.

Under the No Action Alternative, THPs would also include a cumulative effects analysis that would address past and future impacts on biological resources. This analysis would include discussion on the following within the context of impacts to fish and wildlife: (1) structural diversity within streams; (2) instream and upslope downed woody debris; (3) riparian vegetation; (4) presence and recruitment of snags, dens, and nest trees; (5) presence of multi-storied tree canopies; hardwood cover; (6) presence of late seral forest characteristics and late seral continuity; and (7) presence of other special wildlife habitat elements.

Simpson would, as appropriate and with input from the multi-disciplinary review team, other interested agencies, and the public, incorporate into THPs other site-specific measures designed to reduce significant individual and cumulative impacts to sensitive and other species.

2.2 Proposed Action

Under the Proposed Action, Simpson would continue to conduct timber harvesting in accordance with the CFPRs and its NSOHCP. (The CFPRs as they exist on July 1, 2001, are used as a baseline for purposes of analysis in this EIS.) Simpson would also implement an Aquatic HCP/CCAA within the Action Area. Operations within the Action Area would be subject to the provisions of an ITP and ESP.

NMFS would issue Simpson an ITP with a term of 50 years for three listed fish ESUs (coho salmon [Southern Oregon/Northern California Coast ESU], chinook salmon [California Coastal ESU], and steelhead [Northern California ESU]) and three unlisted fish ESUs (chinook salmon [Southern Oregon and Northern California Coastal ESU, Upper Klamath/Trinity Rivers ESU] and steelhead [Klamath Mountains Province ESU]). The USFWS would issue Simpson an ESP, also with a 50-year term, covering two unlisted fish species, (coastal cutthroat and rainbow trout), and two unlisted amphibians (southern torrent salamander and tailed frog). Table 2.2-1 lists species that would receive ITP/ESP coverage under the Proposed Action.

TABLE 2.2-1
Fish and Amphibian Species that Would Be Covered Under the Proposed Action

Species Common Name Scientific Name	Listing/Sensitivity Status Within the Action Area	
	Federal	State
Fish		
Coho salmon (<i>Oncorhynchus kisutch</i>) Southern Oregon/Northern California Coast ESU	FT	SC
Steelhead trout ^a (anadromous) (<i>Oncorhynchus mykiss</i>) Northern California ESU	FT	None
Steelhead trout ^a (anadromous) (<i>Oncorhynchus mykiss</i>) Klamath Mountains Province ESU	None	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) California Coastal ESU	FT	None

TABLE 2.2-1

Fish and Amphibian Species that Would Be Covered Under the Proposed Action

Species Common Name <i>Scientific Name</i>	Listing/Sensitivity Status Within the Action Area	
	Federal	State
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Southern Oregon and Northern California Coastal ESU	None	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Upper Klamath/Trinity Rivers ESU	None	None
Coastal cutthroat trout (anadromous and resident) (<i>Oncorhynchus clarki clarki</i>)	FSS	CSC
Rainbow trout ^a (resident) (<i>Oncorhynchus mykiss</i>)	None	None
Amphibians		
Southern torrent salamander (<i>Rhyacotriton variegatus</i>)	FSC	CSC
Tailed frog (<i>Ascaphus truei</i>)	FSC	CSC

^a Steelhead and rainbow trout are two different life history types of the species *Oncorhynchus mykiss*. The anadromous form (steelhead) is under the jurisdiction of the NMFS, whereas the resident form (rainbow) is under the jurisdiction of the USFWS

Federal

FT Federal threatened species
FSC Federal species of concern
FSS Forest Service sensitive species

State

CSC CDFG Species of Special Concern
SC Candidate for State Listing

Existing measures employed by Simpson to protect Class I, II, and III streams would be supplemented by Simpson's AHCP/CCAA Conservation Strategy, which includes enhanced riparian management zone (RMZ) widths, enhanced riparian protection within the RMZs, and establishment of equipment exclusion zones (EEZs) (see below). Simpson would also implement *ownership-wide* mitigation, management, and monitoring measures. These include:

- Implementation of an ownership-wide Road Management Plan that provides for selective and road-related fish passage enhancement (barrier removal); implementation of practices that are designed to minimize sediment discharge to Class I, II, and III streams; and decommissioning of some roads.
- Protection of unique geomorphic features, such as channel migration zones and floodplains
- Adoption of various slope stability and ground disturbance measures
- Effectiveness and compliance monitoring, plus adaptive management and structured feedback loops, subject to the available funding of the account

2.2.1 Timber Harvesting and Forest Management Activities

General forest management and timber harvesting activities noted under the No Action Alternative would continue under this alternative. The use of fertilizers and herbicides for purposes of enhancing tree growth and controlling competing brush vegetation in even-aged regeneration units and roadside areas would continue under the Proposed Action; they would not be covered activities under the ITP or ESP.

Under the Proposed Action, Simpson would implement the following additional key measures on its fee-owned lands within the Action Area that supplement the measures described under the No Action Alternative.

2.2.1.1 Harvesting and Transporting Timber

- Harvest timber within RMZs in accordance with conservation measures defined in the AHCP/CCAA, as summarized below in Section 2.2.3.1 of this EIS.
- Prohibit timber harvesting within the “inner zone” of all Class I RMZs and 2nd order or larger Class II RMZs (see Section 2.2.3.1 below) that are located below designated “steep streamside slope management zones” (SMZs) (see Sections 6.2.2.1 and 6.3.2.1 of the proposed AHCP/CCAA), except for purposes of creating cable-yarding corridors when other options are impractical. (RMZ areas located below an SMZ are referred to as RSMZs in the proposed AHCP/CCAA.) Retention of a minimum 85 percent overstory canopy would be required in Class I and 2nd order or larger Class II RSMZ “outer zones.”
- Allow limited timber harvesting within the first 1,000 feet of a 1st order Class II RSMZ inner zone subject to 85 percent canopy closure retention post-harvest. A minimum 75 percent overstory canopy retention within the first 1,000 feet of a 1st order Class II RSMZ outer zone would also be required. (See Section 6.2.2.1 of the proposed AHCP/CCAA.)
- Prohibit timber harvesting within the entire RSMZ for the Coastal Klamath and Blue Creek Hydrographic Regions.
- Exclude use of heavy equipment within RMZs, with the exception of existing roads and landings, construction of spur roads to extend outside the RMZ, and stream crossings.
- Use single-tree selection as the initial silvicultural prescription within SMZs and the only prescription within headwall swales. In addition, one harvesting entry would be allowed within SMZs and headwall swales for the term of the permit. All hardwoods within SMZs and headwall swales would be retained and, wherever possible, Simpson would provide for even spacing of unharvested conifers such that all species and size classes represented in pretreatment stands would generally be represented post harvest.
- Establish no-cut zones within the toe, and 25 feet upslope from the top of the toe of active deep-seated landslides, except for purposes of creating cable-yarding corridors when other options are impractical. Similarly establish no-cut zones upslope of the deep-seated landslide scarp so as to taper to the lateral margins of the scarp.
- Prohibit timber harvesting within the boundaries of shallow rapid landslides, and retain a minimum 70 percent overstory canopy within 50 feet above and 25 feet on the sides of

shallow rapid landslides. This default prescription may be modified subsequent to a site-specific geologic review.

- Cease log hauling and landing use (including helicopter service landing areas) if such use results in runoff of waterborne sediment in amounts sufficient to cause a visible increase in turbidity in any ditch or road surface which drains into a Class I, II, or III watercourse, regardless of the time of year.
- Allow loading and hauling of logs during the winter period (October 15 through May 14) only on roads and landings with rock surfaces during extended dry fall periods (October 16 through November 15), if less than four inches of rainfall has accumulated from September 1. Loading and hauling will cease when cumulative rainfall reaches four inches. Loading and hauling will be permitted with early spring drying (May 1 through May 14), if no measurable rainfall has occurred within the last 5 days and no rain is forecasted by the National Weather Service for the next 5 days.
- Prohibit the use of landings on roads within RMZs during the winter period.
- Limit vehicular use on unrocked roads during the winter period to all-terrain vehicles (ATVs) only. Other vehicular use of seasonal roads would be allowed if early spring drying or an extended dry fall occurs (see above).
- Restrict water drafting and use of gravity-fed water storage systems for timber operations in accordance with procedures detailed in the AHCP/CCAA. (See Section 6.2.3.13 of the AHCP/CCAA.)

2.2.1.2 Timber Stand Regeneration and Improvement – Site Preparation

- Implement various measures contained in the AHCP/CCAA that focus on minimizing surface erosion from site preparation operations through: (1) minimization of bare soil exposure within harvest units, (2) minimization of fireline construction, (3) maintenance of a nearly continuous forest floor layer of duff and woody material, and (4) prevention of drainage failures and sediment delivery from firelines.

2.2.1.3 Road and Landing Construction, Reconstruction, and Maintenance

- Complete within five years of permit issuance a prioritization of sub-watershed road work units for risk assessment that weights risk on the basis of biological, geomorphic, and road-related management criteria, as described in the AHCP/CCAA.
- Based on a priority ranking of sub-watershed road work units, identify road-related sediment sources using a two-step process of air photo analysis and field inventories, as outlined in the AHCP/CCAA.
- On the basis of the road assessment and treatment prioritization noted above, develop an implementation plan to effect (1) temporary road decommissioning; (2) permanent road decommissioning; or (3) road upgrading, as appropriate.¹

¹ Simpson would apply road assessment and implementation plan measures to all fee-owned lands and the 1,866 acres in which it owns perpetual harvesting rights granted by Simpson Timber Company on June 28, 2002, within the Action Area; these measures would not be applied to other existing perpetual harvesting rights areas or any harvesting rights areas acquired over time, unless provided for in an agreement with the fee owner.

- Implement a formalized biannual training program for equipment operators and supervisors on proper road and landing construction, upgrading, maintenance, and decommissioning practices with an emphasis on practical, effective erosion and sediment control.
- Decommission or upgrade roads in accordance with the implementation plan during the non-winter period only, except during dry fall periods under circumstances defined in the AHCP/CCAA. Simpson may also upgrade roads during early spring drying periods. (See Sections 6.2.3.3 and 6.2.3.4 of the AHCP/CCAA.)
- Front-load treatment of high- and moderate-risk sediment delivery sites (beginning in the high priority road work units) by providing for an average of \$2.5 million per year, to be adjusted for inflation in 2002 dollars for each year for the first 15 years of the permits (for a total of \$37.5 million unless the acceleration period is adjusted following revision of the estimate of sediment yield from high- and moderate-risk sediment delivery sites at the end of the first five years following permit issuance. The acceleration period and monetary commitment could be adjusted (upward or downward) by up to 1.5 years and \$3.75 million depending on the revised estimate of sediment yield. Under the Proposed Action, 3,058,000 cubic yards of sediment would be removed during the first 15 years of the permit term (compared to 1,223,000 cubic yards under the No Action Alternative).
- Surface roads and landings used during the winter period to a minimum compacted depth of 12 inches of pit run rock or a combination of pit run and crushed rock.
- Install culverts with a minimum diameter of 24 inches for all Class II stream crossings on management roads and 18 inches on logging road ditch drains.
- Inspect all mainline roads prior to September 15 of each year and perform priority repair/maintenance tasks prior to the winter period.²
- Maintain other management roads or roads yet to be decommissioned on a three-year rotating basis in accordance with a maintenance schedule contained in the AHCP/CCAA.³ (See Section 6.2.3.9.4 of the AHCP/CCAA.)
- Implement a response plan as described in the AHCP/CCAA to large storm events that could result in major sediment inputs to stream channels.
- Draft water from streams, reservoirs, lakes, and ponds in accordance with various guidelines and procedures described in the AHCP/CCAA to protect covered species.
- Implement various other road/landing construction, reconstruction, and maintenance measures contained in the AHCP/CCAA, for purposes of further minimizing potential sediment delivery to the waters of Class I, II, or III streams.

² Simpson would apply routine road maintenance and inspection measures only where Simpson has exclusive road-use rights. Road maintenance and inspection where Simpson does not have exclusive road-use rights in the Action Area would be conducted in accordance with existing CFPRs and Simpson's management policies.

³ Approximately 45 percent of all of Simpson's roads will be maintained annually following this routine maintenance schedule. The actual percentage of roads to be maintained each year will increase over time because a portion of the current road network is planned for decommissioning. In addition, as the Road Management Plan is implemented and more roads are decommissioned, the overall miles of roads that require maintenance will decrease.

2.2.1.4 Monitoring and Research Activities

Under the Proposed Action, Simpson would commit to continue the various watershed, fish, and wildlife management activities for the enhancement or monitoring of watershed, wildlife, and fisheries resources described under the No Action Alternative in Section 2.1.2.5.

Under the Proposed Action, Simpson would also commit to the following additional monitoring and research programs:

- Annual summer temperature monitoring at selected sites throughout the Action Area
- Annual population monitoring of tailed frog larval populations in paired headwater sites of first and second order streams
- Annual sub-population monitoring of southern torrent salamanders in paired headwater sites in watersheds with and without harvesting activity
- Annual measuring and monitoring of spawning gravel permeability in selected Class I streams at selected sites
- Annual measuring and monitoring of water turbidity above and below stream crossings and permanent monitoring stations at selected sites
- Annual or periodic long-term trend monitoring of Class I channel conditions, sediment delivery from Class III watercourses, effectiveness of hillslope management measures (augmented by focused studies within designated “experimental watersheds”), road-related catastrophic sediment inputs, detailed channel and habitat conditions for selected stream reaches throughout the Action Area, LWD occurrence, and slope stability as a result of implementation of the proposed AHCP/CCAA conservation measures
- Annual summer juvenile salmonid and outmigrant trapping monitoring
- Conduct an assessment of steep streamside slope delineations within five years of approval of the permits by the Services
- Convene a Scientific Review Panel to assess adequacy of SMZ conservation measures after the 15th winter following approval of the AHCP/CCAA by the Services
- Conduct a property-wide hillslope mass wasting assessment within 20 years for purposes of examining relationships between hillslope mass wasting processes and timber management practices

2.2.2 Other Operations and Activities

Other operations and activities noted under the No Action Alternative would continue under the Proposed Action, with the following exception. Instream gravel extraction, subject to permitting requirements of the CDFG, would continue under the Proposed Action; it would not be a covered activity under the ITP or ESP.

Under the Proposed Action, Simpson would implement the following additional key measures on its fee-owned lands within the Action Area that supplement the measures described under the No Action Alternative.

- Prohibit establishment of new rock quarries and borrow pits within a Class I or Class II RMZ.
- Prohibit use of an existing rock quarry or borrow pit that is within 150 feet of a Class I watercourse, within 100 feet of a 2nd order or larger Class II watercourse, or within 70 feet of a 1st order Class II watercourse (first 1,000 feet).
- Extract or haul rock from quarries so as to not cause a visible increase in turbidity in watercourses or hydrologically connected facilities which discharge into watercourses.
- Place overburden generated during development of rock quarries and borrow pits in a stable location away from watercourses and RMZs.

2.2.3 Fish and Wildlife Habitat

2.2.3.1 Riparian Habitat

Following the distinctions used in the CFPs, riparian management measures under the Proposed Action would vary among three broad classes of streams: Class I, Class II, and Class III watercourses. Further divisions would apply within some stream classes on the basis of stream size (Class II streams) and side slopes (Class III streams). Riparian management measures would apply on fee-owned lands within the Action Area.

Class I Watercourses

Under the Proposed Action, Class I streams would include all current or historical fish-bearing streams. RMZ widths for Class I streams would be a minimum of 150 feet slope distance, as measured from the first line of perennial vegetation or from the outer channel migration zone (CMZ) or outer floodplain edge (if greater than 150 feet on one side), where applicable. Under the Proposed Action, the RMZ for Class I streams would contain two sub-zones: an inner zone and outer zone. The minimum width of the inner zone (closest to the stream) would be a variable 50 to 70 feet, depending on side slope gradient. The outer zone would be the remaining 80 to 100 feet and would extend from the outer limit of the inner zone edge. The outer zone could be extended, where applicable and necessary, to cover the entire floodplain and an additional 30 to 50 feet (depending on side slope gradient) beyond the outer edge of the floodplain.

Riparian habitat management described under the No Action Alternative would continue, unless superseded or augmented by conservation measures contained in the AHCP/CCAA. Measures superseding those described under the No Action Alternative, plus additional AHCP/CCAA conservation measures, would be as follows:

- Within the 50- to 70-foot inner zone, Simpson would retain at least 85 percent overstory canopy closure. Within the remainder of the RMZ (outer zone), at least 70 percent overstory canopy would be retained, except as noted below for Class I RMZs located below SMZs where 75 percent overstory canopy closure would be retained.
- If the inner zone is predominately composed of hardwoods, no conifers would be taken from the inner zone. In addition, timber harvesting within RMZs would not reduce the conifer stem density to less than 15 conifer stems per acre.

- Within the RMZ, no trees would be harvested that contribute to bank stability or are judged likely to recruit to the watercourse.⁴
- The RMZ would be an EEZ with the exception that equipment could use existing roads, landings, and stream crossings.
- During the life of the permit, only a single harvest entry would occur into an RMZ.
- Salvage would not occur within inner zones, on floodplains, or CMZs. Salvage would be limited to downed trees in the outer zone, and would be allowed only if the wood could not be incorporated into the bankful channel, is not contributing to bank or slope stability, or is not positioned so as to intercept sediment moving toward the stream.
- Timber harvesting would be prohibited within all Class I RMZ inner zones that are located below SMZs (i.e. RSMZs) (see Sections 6.2.2.1 and 6.3.2.1 of the proposed AHCP/CCAA), except for purposes of creating cable-yarding corridors when other options are impractical. Retention of a minimum 85 percent overstory canopy closure would be required in RSMZ outer zones. In addition, no timber harvesting would be allowed within the entire RSMZ in the Coastal Klamath and Blue Creek HPAs.
- Where features of instability are identified within the RMZ, additional site-specific conservation measures may apply (see Section 2.2.1.1, *Harvesting and Transporting Timber*).
- Any ground disturbance larger than 100 square feet in size caused by management activities within the RMZ (except hand-constructed firelines) would be mulched and seeded or otherwise treated to reduce the potential for sediment delivery to the stream.
- Prohibit establishment of new rock quarries and borrow pits within a Class I RMZ.
- Prohibit use of an existing rock quarry or borrow pit that is within 150 feet of a Class I watercourse.

Class II Watercourses

For purposes of the proposed AHCP/CCAA, Class II streams contain no fish, but support or provide habitat for aquatic vertebrate species. RMZ widths for Class II streams would be a minimum of 70 or 100 feet (slope distance), as measured from the first line of perennial vegetation. The 70-foot minimum buffer would apply to the first 1,000-foot segment of the smallest (1st order) Class II stream; the 100-foot minimum buffer would apply to the remaining portion of the small (1st order) Class II streams, as well as to larger Class II streams (2nd order or higher). A preliminary assessment of Class II RMZ widths on Simpson fee-owned lands indicates that approximately 61 percent of the total Class II stream lengths would receive 100-foot RMZs, and 70-foot RMZs would apply on the remaining 39 percent. Under the Proposed Action, the RMZ for Class II streams, as with Class I streams, would contain an inner zone and outer zone. The minimum width of the inner zone would be a fixed 30 feet. The outer zone would be the remaining 40 or 70 feet

⁴ The distinction in retention levels between inner and outer zones of the RMZ would be reduced on increasingly steeper slopes (generally greater than 50 percent) because of the increased potential for trees to recruit at greater distances from the stream. Redwoods would be preferentially harvested over other conifers, because of their ability to sprout from the remaining root system.

(see above) and would extend to the edge of the floodplain from the outer limit of the inner zone edge.

- Riparian habitat management within the RMZ of Class II streams would generally be the same as for Class I streams under this alternative, with the exception that trees that are judged likely to recruit to a watercourse would not be harvested within the first 200 feet of the Class II RMZ adjacent to a Class I RMZ. Other exceptions specific to Class II RSMZs are noted below.
- Timber harvesting would be prohibited within the inner zone of 2nd order or larger Class II RSMZs (see Sections 6.2.2.1 and 6.3.2.1 of the proposed AHCP/CCAA), except for purposes of creating cable-yarding corridors when other options are impractical. Retention of a minimum 85 percent overstory canopy closure would be required in 2nd order or larger Class II RSMZ outer zones.
- Timber harvesting would be allowed within the first 1,000 feet of a 1st order Class II RSMZ inner zone subject to retaining 85 percent overstory canopy closure post-harvest. Retention of a minimum 75 percent overstory canopy closure within the first 1,000 feet of a 1st order Class II RSMZ outer zone would also be required. (See Section 6.2.2.1 of the proposed AHCP/CCAA.)
- Prohibit use of an existing rock quarry or borrow pit that is within 100 feet of a 2nd order or larger Class II watercourse, or within 70 feet of a 1st order Class II watercourse (first 1,000 feet).

Class III Watercourses

Under the Proposed Action, protection of Class III streams would occur in a two-tiered system, where the tiers correspond to two slope classes. Tier A protections would generally apply where streamside gradients are less than 60 percent to 70 percent. Conversely, Tier B protections would apply where gradients are greater than 60 percent to 70 percent. (The threshold gradient percent is different for different Hydrologic Planning Area (HPA) groups (see Sections 1.3.2.3 and 6.2.1.5 of Simpson's proposed AHCP/CCAA and Section 3.2.4 of this EIS.)

ELZ management measures for Class III watercourses described under the No Action Alternative would be superceded, as appropriate, or augmented by the following EEZ conservation measures contained in the AHCP/CCAA:

- **Tier A** – Establishment of a 30-foot EEZ, within which all LWD on the ground (not including felled trees) would be retained. Ignition of fire during site preparation would also be prohibited within the EEZ.
- **Tier B** – Establishment of a 50-foot EEZ, within which all hardwoods, non-merchantable trees, and on-the-ground LWD would be retained. Conifers would also be retained where they contribute to maintaining bank stability or if they are acting as a control point in the channel. A minimum average of one conifer per 50 feet of stream length within the EEZ would also be retained. Ignition of fire during site preparation would also be prohibited within the EEZ.

Ponds, Swamps, Bogs, Springs and Seeps

Ponds, swamps, bogs, springs, and seeps that support aquatic species would also be afforded the same protection as other Class II watercourses noted above for riparian habitats.

2.2.3.2 Large Woody Debris

Under the Proposed Action, large woody debris retention, removal, and recruitment activities would be the same as those described under the No Action Alternative, but would be augmented by AHCP/CCAA conservation measures noted above for Class I and II RMZs and Class III EEZs.

2.2.3.3 Snags

General snag retention and recruitment measures under the Proposed Action would be the same as under the No Action Alternative, as augmented by additional measures contained in the AHCP/CCAA. As noted for the No Action Alternative, future recruitment of snags would occur through the retention of old-growth elements in the 39 set-aside areas, minimum overstory canopy retention standards within RMZs, and retention of a variety of tree sizes and species within RMZs. Recruitment would be enhanced under the Proposed Action through RMZ-specific measures noted above. These include the establishment of a 50- to 70-foot inner zone for Class I streams and 30-foot inner zone for Class II streams, restrictions on salvage activity, single harvest entry limitations, minimum conifer retention standards, and limitations on harvesting of “stream recruitment” trees.

2.2.3.4 Hardwoods

Under the Proposed Action, management of hardwood resources within the Action Area would be the same as under the No Action Alternative, except for retention of a greater number of hardwoods within SMZ areas, headwall swales, and Tier B Class III EEZs (see Section 2.2.1.1).

2.2.4 Measures to Protect Federal and State Listed Species

Under the Proposed Action, take of listed species covered under the AHCP/CCAA would be permitted provided such action is incidental to a covered activity, such as timber harvesting. Specific measures contained in the CFPRs or developed pursuant to the THP process that are designed for the purpose of avoiding take of listed species and minimizing and mitigating environmental impacts to such species and their habitats would be superseded by measures contained in the AHCP/CCAA and its accompanying ITP to minimize and mitigate the impacts of incidental take and comply with other requirements of the ESA. Simpson would remain subject to the take prohibition for other listed species that are not covered by the ITP but that may occur within the Action Area. For listed species not covered by the AHCP/CCAA and ITP, Simpson would continue to implement measures designed to avoid take of these listed species, including continuing to adhere to measures contained in its NSOHCP and the CFPRs (e.g., for certain listed bird species, the CFPRs include nest protection and other measures designed to avoid take), and measures identified during the THP preparation and review process).

2.2.4.1 Coho Salmon, Chinook Salmon, and Steelhead

Under the Proposed Action, incidental take of these species would be authorized subject to the terms of the ITP. Simpson would implement AHCP/CCAA measures intended to minimize and mitigate the impacts of incidental take of these fish species. These include many of the general forest management, riparian habitat, large woody debris, and snag measures noted above, which were designed to protect or enhance habitat for salmonid fish species.

2.2.4.2 Tidewater Goby

As with the No Action Alternative, Simpson would remain subject to the prohibition on unauthorized take of this species. The Services do not anticipate under the Proposed Action that Simpson would change any of the measures it currently implements for this species. It is anticipated that Simpson would continue to incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.4.3 American Peregrine Falcon

Under the Proposed Action, Simpson would implement CFPR prescriptive protection measures specific to the species and incorporate into THPs site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.4.4 Bald Eagle

The Services do not anticipate under the Proposed Action that Simpson would change any of the measures it currently implements for this species. As with the No Action Alternative, Simpson would continue to implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.4.5 Bank Swallow

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.4.6 Little Willow Flycatcher

Under the Proposed Action, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.4.7 Marbled Murrelet

The Services do not anticipate under the Proposed Action that Simpson would change any of the measures it currently implements for this species. As with the No Action Alternative, Simpson would continue to implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.4.8 Northern Spotted Owl

Under the Proposed Action, Simpson would continue to comply with measures contained in its NSOHCP and associated Implementation Agreement that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and forest management operations.

2.2.4.9 Western Snowy Plover

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.2.5 Measures for Other Species

The ITP/ESP would provide regulatory assurances for unlisted, covered fish and amphibian species (see above) that have either been proposed for listing or are considered to be sensitive because populations or habitats are thought to be declining. Under the Proposed Action, specific measures developed pursuant to the THP process designed to mitigate or avoid significant impacts to the unlisted, covered species would be augmented by measures contained in the AHCP/CCAA and its accompanying ITP/ESP to mitigate or avoid significant impacts to these species and to minimize and mitigate the impacts of incidental take in the event these species are listed in the future. The conservation strategy for unlisted, covered species relies extensively on AHCP/CCAA measures intended to minimize and mitigate the impacts of incidental take of the listed, covered species discussed above. These include many of the general forest management, riparian habitat, large woody debris, and snag measures noted above that were designed to protect or enhance habitat for listed salmonid fish species.

Under the Proposed Action, Simpson would continue to implement measures designed to mitigate or avoid significant impacts to other unlisted species, not covered by the AHCP/CCAA but considered “sensitive” by the Board of Forestry (osprey, northern goshawk, golden eagle, great blue heron, and great egret). Simpson would implement CFPRs specific to these species and design THPs that incorporate site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process, as necessary, to avoid or mitigate potentially significant environmental effects to insignificance. In addition, Simpson would remain subject to state and federal laws, such as the Migratory Bird Treaty Act, Bald Eagle and Golden Eagle Protection Act,

and the prohibitions on taking of certain raptors pursuant to Sections 3503.3 and 3511 of the California Fish and Game Code.

2.3 Alternative A (Listed Salmonid Species Only)

Under Alternative A, Simpson would continue to conduct timber harvesting in the Action Area in accordance with the CFPRs and its NSOHCP. (The CFPRs as they exist on July 1, 2001, are used as a baseline for purposes of analysis in this EIS.) Simpson would also implement an AHCP within the Action Area. Operations within the Action Area would be subject to the provisions of an ITP only, meaning that there would be no coverage for unlisted species and no application for an ESP.

NMFS would issue Simpson an ITP with a term of 50 years for three listed fish ESUs (coho salmon [Southern Oregon/Northern California Coast ESU], chinook salmon [California Coastal ESU], and steelhead [Northern California ESU]). Table 2.3-1 lists species that would receive ITP coverage under Alternative A.

Under Alternative A, mitigation, management, and monitoring measures would be the same as those specified for the Proposed Action, except that monitoring measures specific to amphibians would be dropped under this alternative.

TABLE 2.3-1
Fish Species that Would Be Covered Under Alternative A

Species Common Name <i>Scientific Name</i>	Listing/Sensitivity Status Within the Action Area	
	Federal	State
Coho salmon (<i>Oncorhynchus kisutch</i>) Southern Oregon/Northern California Coast ESU	FT	SC
Steelhead trout ^a (<i>Oncorhynchus mykiss</i>) Northern California ESU	FT	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) California Coastal ESU	FT	None

^a Steelhead is the anadromous life history type of the species *Oncorhynchus mykiss* and is under the jurisdiction of the NMFS

Federal

FT Federal threatened species

State

SC Candidate for State listing

2.3.1 Timber Harvesting and Forest Management Activities

General forest management and timber harvesting activities noted for the Proposed Action would be the same under this alternative, except that monitoring of tailed frog larval and southern torrent salamander populations would not occur.

2.3.2 Other Operations and Activities

Under Alternative A, other operations and activities would be the same as noted under the Proposed Action.

2.3.3 Fish and Wildlife Habitat

Conservation measures for riparian habitat, large woody debris, snags, and hardwoods described for the Proposed Action would be the same under this alternative.

2.3.4 Measures to Protect Federal and State Listed Species

Under Alternative A, take of AHCP covered listed species would be permitted provided such action is incidental to covered activities. Specific measures contained in the CFPRs or developed pursuant to the THP process that are designed for the purpose of avoiding take of listed species and minimizing and mitigating significant impacts would be superseded by measures contained in the AHCP and its accompanying ITP to minimize and mitigate the impacts of incidental take and comply with other requirements of the ESA. Simpson would remain subject to the take prohibition for other listed species that are not covered by the ITP but that may occur within the Action Area. For other listed species not covered by the AHCP, Simpson would continue to implement measures designed to avoid unauthorized take of listed species, including continuing to adhere to measures contained in the CFPRs (e.g., for certain listed bird species, the CFPRs include nest protection and other measures designed to avoid take, measures defined in its NSOHCP, and measures identified during the THP preparation and review process).

2.3.4.1 Coho Salmon, Chinook Salmon, and Steelhead

Under Alternative A, incidental take of these species would be authorized subject to the terms of the ITP. Simpson would implement AHCP measures intended to minimize and mitigate the impacts of incidental take of these fish species. These include many of the general forest management, riparian habitat, large woody debris, and snag measures described for the Proposed Action, which were designed to protect or enhance habitat for salmonid fish species.

2.3.4.2 Tidewater Goby

As with the No Action Alternative, Simpson would remain subject to the prohibition on unauthorized take of this species. The Services do not anticipate under Alternative A that Simpson would change any of the measures it currently implements for this species. It is anticipated that Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.4.3 American Peregrine Falcon

Under Alternative A, Simpson would implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.4.4 Bald Eagle

The Services do not anticipate under Alternative A that Simpson would change any of the measures it currently implements for this species. As with the No Action Alternative, Simpson would continue to implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.4.5 Bank Swallow

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.4.6 Little Willow Flycatcher

Under Alternative A, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.4.7 Marbled Murrelet

The Services do not anticipate under Alternative A that Simpson would change any of the measures it currently implements for this species. As with the No Action Alternative, Simpson would continue to implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.4.8 Northern Spotted Owl

As would be the case for both the No Action Alternative and the Proposed Action, Simpson would continue under Alternative A to comply with measures contained in its NSOHCP and associated Implementation Agreement that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and forest management operations.

2.3.4.9 Western Snowy Plover

As with the No Action Alternative, Simpson would incorporate into THPs site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.3.5 Measures for Other Species

In contrast to the Proposed Action, the ITP under Alternative A would not provide assurances for unlisted fish and amphibian species that have either been proposed for listing

or are considered to be sensitive because populations or habitats are thought to be declining. However, the AHCP conservation measures for this alternative relating to general forest management, riparian habitat, large woody debris, and snags for listed, covered fish species, would also benefit and mitigate or avoid significant impacts to many unlisted fish and aquatic species not covered by the ITP (e.g., the tailed frog and southern torrent salamander).

Under Alternative A, Simpson would continue to implement measures designed to mitigate or avoid significant impacts to other unlisted species, not covered by the AHCP but considered “sensitive” by the Board of Forestry (osprey, northern goshawk, golden eagle, great blue heron, and great egret). Simpson would implement CFPRs specific to these species and design THPs that incorporate site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process, as necessary, to avoid or mitigate potentially significant environmental effects to insignificance. In addition, Simpson would remain subject to state and federal laws, such as the Migratory Bird Treaty Act, Bald Eagle and Golden Eagle Protection Act, and the prohibitions on taking of certain raptors pursuant to Sections 3503.3 and 3511 of the California Fish and Game Code.

2.4 Alternative B (Simplified Prescriptions Strategy)

Under Alternative B, Simpson would continue to conduct timber harvesting on its property in accordance with the CFPRs and its NSOHCP. (The CFPRs as they exist on July 1, 2001, are used as a baseline for purposes of analysis in this EIS.) Simpson would also implement an AHCP/CCAA within the Action Area. Operations within the Action Area would be subject to the provisions of an ITP and ESP.

NMFS would issue Simpson an ITP with a term of 50 years for three listed fish ESUs (coho salmon [Southern Oregon/Northern California Coast ESU], chinook salmon [California Coastal ESU], and steelhead [Northern California ESU]) and three unlisted fish ESUs (chinook salmon [Southern Oregon and Northern California Coastal ESU, Upper Klamath/Trinity Rivers ESU] and steelhead [Klamath Mountains Province ESU]). The USFWS would issue Simpson an ESP, also with a 50-year term, covering two unlisted fish species (coastal cutthroat and rainbow trout), and two unlisted amphibians (southern torrent salamander and tailed frog). Table 2.4-1 lists species that would receive ITP/ESP coverage under Alternative B.

Existing measures employed by Simpson to protect Class I, Class II, and Class III streams would be supplemented by an AHCP/CCAA Conservation Strategy specific to this alternative, which includes fixed riparian buffer widths within which no management or timber harvesting would occur, and establishment of ELZs. Simpson would not implement an ownership-wide Road Management Plan or slope stability and ground disturbance measures, and would not provide protection for unique geomorphic features, such as CMZs and floodplains. Effectiveness and compliance monitoring would not be as extensive under this alternative as for the Proposed Action, and adaptive management with structured feedback loops would not be conducted.

2.4.1 Timber Harvesting and Forest Management Activities

General forest management and timber harvesting activities noted under the No Action Alternative would continue under this alternative. Although fire suppression would continue on Simpson lands, it would not be a covered activity under the ITP/ESP under this alternative. The use of fertilizers and herbicides for purposes of enhancing tree growth and controlling competing brush vegetation in even-aged regeneration units and roadside areas would also continue under Alternative B, but also would not be a covered activity under the ITP or ESP.

TABLE 2.4-1
Fish and Amphibian Species that Would Be Covered Under Alternative B

Species Common Name <i>Scientific Name</i>	Listing/Sensitivity Status Within the Action Area	
	Federal	State
Fish		
Coho salmon (<i>Oncorhynchus kisutch</i>) Southern Oregon/Northern California Coast ESU	FT	SC
Steelhead trout ^a (anadromous) (<i>Oncorhynchus mykiss</i>) Northern California ESU	FT	None
Steelhead trout ^a (anadromous) (<i>Oncorhynchus mykiss</i>) Klamath Mountains Province ESU	None	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) California Coastal ESU	FT	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Southern Oregon and Northern California Coastal ESU	None	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Upper Klamath/Trinity Rivers ESU	None	None
Coastal cutthroat trout (anadromous and resident) (<i>Oncorhynchus clarki clarki</i>)	FSS	CSC
Rainbow trout ^a (resident) (<i>Oncorhynchus mykiss</i>)	None	None
Amphibians		
Southern torrent salamander (<i>Rhyacotriton variegatus</i>)	FSC	CSC
Tailed frog (<i>Ascaphus truei</i>)	FSC	CSC

^a Steelhead and rainbow trout are two different life history types of the species *Oncorhynchus mykiss*. The anadromous form (steelhead) is under the jurisdiction of the NMFS, whereas the resident form (rainbow) is under the jurisdiction of the USFWS

Federal

FT Federal threatened species
FSC Federal species of concern
FSS Forest Service sensitive species

State

CSC CDFG Species of Special Concern
SC Candidate for State listing

Under Alternative B, Simpson would commit to the following additional key measures in implementing the AHCP/CCAA relative to the No Action Alternative.

- Prohibit timber harvesting within riparian buffers, except for purposes of creating cable-yarding corridors when other options are impractical
- Exclude use of heavy equipment within riparian buffers, with the exception of existing roads and stream crossings
- Prohibit use of landings within riparian buffers

2.4.2 Other Operations and Activities

Other operations and activities noted under the No Action Alternative would continue under Alternative B, with the following exception. Instream gravel extraction, subject to permitting requirements of the CDFG, would continue under the Proposed Action; it would not be a covered activity under the ITP or ESP.

2.4.3 Fish and Wildlife Habitat

2.4.3.1 Riparian Habitat

Following the distinctions used in the CFPRs, riparian management measures under Alternative B would vary among three broad classes of streams: Class I, Class II, and Class III watercourses.

Class I Watercourses

Under Alternative B, Class I streams would include all fish-bearing streams. Riparian buffers for Class I streams would have fixed widths of 200 feet (slope distance), as measured from the first line of perennial vegetation. Under this alternative, there would be no forest management or riparian habitat management within Class I riparian buffers (with the exception of creating cable-yarding corridors when other options are impractical). Many measures described under the No Action Alternative for riparian buffer areas would consequently become inapplicable, because the CFPRs assume some level of timber harvesting within these zones. The use of heavy equipment within Class I riparian buffers would also be prohibited under this alternative, except for the use of existing roads and stream crossings for log hauling and access purposes (unless otherwise qualified by the CFPRs).

Class II Watercourses

Riparian buffers for Class II streams would have fixed widths of 130 feet (slope distance), as measured from the first line of perennial vegetation. Under this alternative, there also would be no forest management or riparian habitat management within Class II riparian buffers (with the exception of creating cable-yarding corridors when other options are impractical). Many measures described under the No Action Alternative for riparian buffer areas would again become moot, because the CFPRs assume some level of timber harvesting within these zones. The use of heavy equipment within Class II riparian buffers would also be prohibited under this alternative, except for the use of existing roads and stream crossings for log hauling and access purposes (unless otherwise qualified by the CFPRs).

Class III Watercourses

Under Alternative B, protection of Class III streams would be the same as under the No Action Alternative.

Ponds, Swamps, Bogs, Springs and Seeps

Ponds, swamps, bogs, springs, and seeps that support aquatic species would also be afforded the same protection as other Class II watercourses noted above for riparian habitats.

2.4.3.2 Large Woody Debris

Under Alternative B, large woody debris retention, removal, and recruitment activities would be the same as those described under the No Action Alternative. However, because no timber or riparian management would occur within the riparian buffers under this alternative, future recruitment of snags would be almost totally dependent on natural causes (e.g., windthrow events, landslides, and natural mortality-inducing processes within the buffer areas).

2.4.3.3 Snags

General snag retention and recruitment measures under the Proposed Action would be the same as under the No Action Alternative. However, because no timber or riparian management would occur within the riparian buffers under this alternative, future recruitment of snags would be almost totally dependent on natural mortality-inducing processes within the buffer areas.

2.4.3.4 Hardwoods

Under the Alternative B, management of hardwood resources within the Action Area would generally be the same as under the No Action Alternative.

2.4.4 Measures to Protect Federal and State Listed Species

Under Alternative B, take of AHCP/CCAA covered listed species would be permitted provided such action is incidental to covered activities. Specific measures contained in the CFPRs or developed pursuant to the THP process that are designed for the purpose of avoiding take of listed species and minimizing and mitigating environmental impacts to such species and their habitats would be superseded by measures contained in the AHCP/CCAA and its accompanying ITP to minimize and mitigate the impacts of incidental take and comply with other requirements of the ESA. Simpson would remain subject to the take prohibitions for other listed species that are not covered by the ITP but that may occur within the Action Area. For other listed species not covered by the AHCP/CCAA, Simpson would continue to implement measures designed to avoid unauthorized take of listed species, including continuing to adhere to measures contained in the CFPRs (e.g., for certain listed bird species, the CFPRs include nest protection and other measures designed to avoid take, measures defined in its NSOHCP, and measures identified during the THP preparation and review process).

2.4.4.1 Coho Salmon, Chinook Salmon, and Steelhead

Under Alternative B, incidental take of these species would be authorized subject to the terms of the ITP. Simpson would implement AHCP/CCAA measures intended to minimize

and mitigate the impacts of incidental take of these fish species, including establishment of fixed riparian buffers and no harvesting or other management within riparian buffer areas.

2.4.4.2 Tidewater Goby

As with the No Action Alternative, Simpson would remain subject to the prohibition on unauthorized take of this species. The Services do not anticipate under Alternative B that Simpson would change any of the measures it currently implements for this species. It is anticipated that Simpson would continue to incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.4.3 American Peregrine Falcon

Under Alternative B, Simpson would implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists, into THPs for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.4.4 Bald Eagle

The Services do not anticipate under Alternative B that Simpson would change any of the measures it currently implements for this species. As with the No Action Alternative, Simpson would continue to implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.4.5 Bank Swallow

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.4.6 Little Willow Flycatcher

Under Alternative B, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.4.7 Marbled Murrelet

The Services do not anticipate under Alternative B that Simpson would change any of the measures it currently implements for this species. As with the No Action Alternative, Simpson would continue to implement CFPR prescriptive measures specific to the species and incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the

purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.4.8 Northern Spotted Owl

As would be the case for both the No Action Alternative and the Proposed Action, Simpson would continue under Alternative A to comply with measures contained in its NSOHCP and associated Implementation Agreement that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and forest management operations.

2.4.4.9 Western Snowy Plover

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.4.5 Measures for Other Species

The ITP/ESP would provide assurances for unlisted, covered fish and amphibian species (see above) that have either been proposed for listing or are considered to be sensitive because populations or habitats are thought to be declining. Under Alternative B, specific measures contained in the CFPRs or developed pursuant to the THP process that are designed to mitigate or avoid significant impacts to unlisted, covered species would be augmented by measures contained in the AHCP/CCAA and its accompanying ITP/ESP to mitigate or avoid significant impacts to these species and to minimize and mitigate the impacts of incidental take in the event these species are listed in the future. The conservation strategy for unlisted, covered species relies extensively on AHCP/CCAA measures intended to minimize and mitigate the impacts of incidental take of the listed, covered species discussed above.

Under Alternative B, Simpson would continue to implement measures designed to mitigate or avoid significant impacts to other unlisted species, not covered by the AHCP/CCAA but considered “sensitive” by the Board of Forestry (osprey, northern goshawk, golden eagle, great blue heron, and great egret). Simpson would implement CFPRs specific to these species and design THPs that incorporate site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process, as necessary, to avoid or mitigate potentially significant environmental effects to insignificance. In addition, Simpson would remain subject to state and federal laws, such as the Migratory Bird Treaty Act, Bald Eagle and Golden Eagle Protection Act, and the prohibitions on taking of certain raptors pursuant to Sections 3503.3 and 3511 of the California Fish and Game Code.

2.5 Alternative C (Expanded Geographic and Species Coverage)

Under Alternative C, Simpson would continue to conduct timber harvesting on its property in accordance with the CFPRs and its NSOHCP. (The CFPRs as they exist on July 1, 2001, are used as a baseline for purposes of analysis in this EIS.) Simpson would also implement an HCP within the Action Area. An additional 26,116 acres of rain-on-snow areas within

Trinity and Del Norte counties are also included in the coverage area for this alternative. Operations within these areas would be subject to the provisions of an ITP.

NMFS and the USFWS would issue Simpson an ITP with a term of 50 years for 16 species. The 16 covered species would consist of three listed fish ESUs, three unlisted fish ESUs, two unlisted fish species, one listed fish species, four unlisted amphibians, one unlisted reptile, and two listed bird species, as shown in Table 2.5-1.

Because this alternative is an expansion of the Proposed Action, the mitigation and monitoring measures described for the species covered under the Proposed Action, would also be applied under Alternative C, where applicable and practicable. The adaptive management program noted for the Proposed Action would also be included under Alternative C. Extra mitigation management and monitoring measures relating to the covered species, as well as their aquatic and semi-aquatic habitat in local and downstream drainages, would be implemented throughout the expanded coverage area as needed. Additional mitigation and management measures specific to the marbled murrelet, bald eagle, and western pond turtle would also be included, and are summarized below.

2.5.1 Timber Harvesting and Forest Management Activities

General forest management and timber harvesting activities noted for the Proposed Action would generally be the same under this alternative, except that Simpson would commit to the following additional key measures in implementing the HCP relative to the Proposed Alternative.

TABLE 2.5-1
Federal and State Protective Status of Fish, Amphibian, and Reptile Species Covered Under Alternative C

Species Common Name <i>Scientific Name</i>	Listing/Sensitivity Status Within the Action Area	
	Federal	State
Fish		
Coho salmon (<i>Oncorhynchus kisutch</i>) Southern Oregon/Northern California Coast ESU	FT	SC
Steelhead trout ^a (anadromous) (<i>Oncorhynchus mykiss</i>) Northern California ESU	FT	None
Steelhead trout ^a (anadromous) (<i>Oncorhynchus mykiss</i>) Klamath Mountains Province ESU	None	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) California Coastal ESU	FT	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Southern Oregon and Northern California Coastal ESU	None	None
Chinook salmon (<i>Oncorhynchus tshawytscha</i>) Upper Klamath/Trinity Rivers ESU	None	None
Coastal cutthroat trout (anadromous and resident) (<i>Oncorhynchus clarki clarki</i>)	FSS	CSC
Rainbow trout ^a (resident) (<i>Oncorhynchus mykiss</i>)	None	None
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE	CSC

TABLE 2.5-1

Federal and State Protective Status of Fish, Amphibian, and Reptile Species Covered Under Alternative C

Species Common Name Scientific Name	Listing/Sensitivity Status Within the Action Area	
	Federal	State
Amphibians		
Southern torrent salamander (<i>Rhyacotriton variegatus</i>)	FSC	CSC
Tailed frog (<i>Ascaphus truei</i>)	FSC	CSC
Foothill yellow-legged frog (<i>Rana boylei</i>)	FSC, FSS	CSC/CFP
Northern red-legged frog (<i>Rana aurora aurora</i>)	FSC, FSS	CSC/CFP
Reptiles		
Western pond turtle (<i>Clemmys marmorata marmorata</i>)	FSC, FSS	CSC/CFP
Birds		
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	FT	SE
Bald eagle (<i>Haliaeetus leucocephalus</i>)	FT	SE

^a Steelhead and rainbow trout are two different life history types of the species *Oncorhynchus mykiss*. The anadromous form (steelhead) is under the jurisdiction of the NMFS, whereas the resident form (rainbow) is under the jurisdiction of the USFWS

Federal

FE Federal endangered species
 FT Federal threatened species
 FSC Federal species of concern
 FSS Forest Service sensitive species

State

CSC CDFG Species of Special Concern
 SC Candidate for State Listing
 CFP California Fully Protected Species
 SC Candidate for State listing
 SE State Endangered Species

2.5.1.1 Harvesting and Transporting Timber

Prohibit timber harvesting operations within the rain-on-snow area from November 15 through May 14, except for non-mechanized planting.

2.5.1.2 Monitoring and Research Activities

Expand the monitoring program for the three types of effectiveness monitoring projects (rapid response, response, and long-term trend) to include additional sites in the rain-on-snow area.

2.5.2 Other Operations and Activities

Under Alternative C, other operations and activities would be the same as noted under the Proposed Action.

2.5.3 Fish and Wildlife Habitat

Conservation measures for riparian habitat, large woody debris, snags, and hardwoods described for the Proposed Action would generally be the same under this alternative. Some

loss of snags, however, would be anticipated under Alternative C as a result of phased harvesting of isolated timber stands of suitable marbled murrelet habitat over the term of the permits (see Section 2.5.4.7. below).

2.5.4 Measures to Protect Federal and State Listed Species

Under Alternative C, take of HCP-covered listed species would be permitted provided such action was incidental to covered activities. Specific measures contained in the CFPRs or developed pursuant to the THP process that are designed for the purpose of avoiding take of listed species and minimizing and mitigating environmental impacts to such species and their habitats would be superseded by measures contained in the HCP and its accompanying ITP to minimize and mitigate the impacts of incidental take and comply with other requirements of the ESA. Simpson would remain subject to the take prohibition for other listed species that are not covered by the ITP but that may occur within the coverage area for this alternative. For other listed species not covered by the HCP, Simpson would continue to implement measures designed to avoid unauthorized take of listed species, including continuing to adhere to measures contained in the CFPRs (e.g., for certain listed bird species, the CFPRs include nest protection and other measures designed to avoid take, measures defined in its NSOHCP, and measures identified during the THP preparation and review process). If a species is also state-listed under CESA, Simpson would not undertake any HCP measures that are likely to take this species unless it also receives incidental take authorization under state law.

2.5.4.1 Coho Salmon, Chinook Salmon, and Steelhead

Under Alternative C, incidental take of these species would be authorized subject to the terms of the ITP. Simpson would implement HCP measures intended to minimize and mitigate the impacts of incidental take of these fish species. These include many of the general forest management, riparian habitat, large woody debris, and snag measures described for the Proposed Action, which were designed to protect or enhance habitat for salmonid fish species.

2.5.4.2 Tidewater Goby

Under Alternative C, incidental take of the tidewater goby would be authorized subject to the terms of the ITP. Simpson would implement HCP measures intended to minimize and mitigate the impacts of incidental take of this fish species. These include many of the general forest management, riparian habitat, and large woody debris described for the Proposed Action, which were designed to protect or enhance habitat for salmonid fish species.

2.5.4.3 American Peregrine Falcon

Under Alternative C, Simpson would implement CFPR prescriptive measures specific to the species and incorporate site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.5.4.4 Bald Eagle

Under Alternative C, Simpson would implement mitigation and management measures designed to avoid take or minimize and mitigate the impact of incidental take on this species. Specific measures contained in the CFPRs or developed pursuant to the THP process that are designed to avoid take of the bald eagle and minimize and mitigate environmental impacts to the bald eagle and its habitat would be superseded by species-specific measures contained in the HCP under this alternative designed to minimize and mitigate the impacts of take and comply with other ESA requirements, to include the following.

- Within proposed THP harvesting units, survey for bald eagle nests and establish 30- to 40-acre nest site management zones within which management prescriptions would be jointly developed by Simpson and USFWS representatives on a site-specific basis

Insofar as the bald eagle is also a state-listed species under CESA, Simpson would not undertake any HCP measures that are likely to take this species unless it also receives incidental take authorization under state law.

2.5.4.5 Bank Swallow

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.5.4.6 Little Willow Flycatcher

Under Alternative C, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.5.4.7 Marbled Murrelet

Under Alternative C, Simpson would implement mitigation and management measures designed to avoid take or minimize and mitigate the impact of incidental take on this species. Specific measures contained in the CFPRs or developed pursuant to the THP process that are designed to avoid take of the marbled murrelet and minimize and mitigate environmental impacts to the murrelet and its habitat would be superseded by species-specific measures contained in the HCP under this alternative designed to minimize and mitigate the impacts of take and comply with other ESA requirements, to include the following.

- Retention and protection over a 50-year period of timber stands identified as suitable for murrelet nesting located adjacent to large blocks of high value murrelet habitat on public lands
- Phased harvest of other isolated timber stands, with harvest occurring first in stands with the lowest potential value for murrelets and provisions for extended phasing of harvests in stands with the highest potential value for murrelets
- Seasonal restrictions on timber operations in and adjacent to murrelet stands

- Designation of no-cut and operational buffers to avoid take of murrelets on adjacent lands
- Thinning of overstocked stands in neighboring Redwood National Park (RNP) to accelerate development of buffer habitat and potential murrelet nesting habitat on public lands
- Development of a corvid management program to reduce predation pressure on nesting murrelets in Redwood National and State Parks
- Funding for murrelet research

Potential significant adverse impacts to the marbled murrelet would also be further avoided or reduced through implementation of the general forest management, riparian habitat, large woody debris, and snag measures described for the Proposed Action and carried forward under this alternative, which were designed to protect or enhance habitat for salmonid fish species.

Insofar as the murrelet is also a state-listed species under CESA, Simpson would not undertake any HCP measures that are likely to take this species unless it also receives incidental take authorization under state law.

2.5.4.8 Northern Spotted Owl

Under Alternative C, Simpson would continue to comply with measures summarized under the No Action Alternative and contained in its NSOHCP and associated Implementation Agreement that provide for the legal incidental take of northern spotted owls in connection with timber harvesting and forest management operations.

2.5.4.9 Western Snowy Plover

As with the No Action Alternative, Simpson would incorporate site-specific measures, developed by Simpson foresters and biologists or identified during the THP preparation and review process, into THPs as necessary for the purpose of avoiding unauthorized take and mitigating or avoiding significant environmental impacts.

2.5.5 Measures for Other Species

The ITP would provide assurances for unlisted, covered fish, amphibian, and reptile species (see above) that have either been proposed for listing or are considered to be sensitive because populations or habitats are thought to be declining. Under Alternative C, specific measures contained in the CFPRs or developed pursuant to the THP process that are designed to mitigate or avoid significant impacts to the unlisted, covered species would be augmented by measures contained in the HCP and its accompanying ITP to mitigate or avoid significant impacts to these species and to minimize and mitigate the impacts of incidental take in the event these species are listed in the future. The conservation strategy for unlisted, covered species relies extensively on HCP measures intended to minimize and mitigate the impacts of incidental take of the listed, covered species discussed for the Proposed Action. These include many of the general forest management, riparian habitat, large woody debris, and snag measures noted under the Proposed Action that were designed to protect or enhance habitat for listed salmonid fish species.

Under Alternative C, one additional species-specific mitigation/management measure would be implemented for the western pond turtle: Avoidance of road building in meadows and open areas in upland habitats, near suitable aquatic habitat for pond turtles.

Under Alternative C, Simpson would continue to mitigate or avoid significant impacts to other unlisted species, not covered by the HCP but considered “sensitive” by the Board of Forestry (osprey, northern goshawk, golden eagle, great blue heron, and great egret). Simpson would implement CFPRs specific to these species and design THPs that incorporate site-specific measures developed by Simpson foresters and biologists or identified during the THP preparation and review process as necessary to avoid or mitigate potentially significant environmental effects to insignificance. In addition, Simpson would remain subject to state and federal laws, such as the Migratory Bird Treaty Act, Bald Eagle and Golden Eagle Protection Act, and the prohibitions on taking of certain raptors pursuant to Sections 3503.3 and 3511 of the California Fish and Game Code.

2.6 Alternatives Considered but Dismissed from Further Consideration

Other alternatives were considered by the Services but not carried forward for detailed analysis during preparation of this EIS. The alternatives considered but not carried forward are: (1) broad application of generic management prescriptions; (2) ITP coverage for terrestrial species (in addition to those considered in Alternative C above) and aquatic and riparian species; and (3) alternative permit terms. These alternatives were not selected for detailed analysis because they do not meet the Services’ purposes and needs or the applicant’s objectives, or they are beyond the scope of the EIS.

2.6.1 Generic Management Prescriptions

In addition to the alternatives carried forward for detailed analysis, the Services considered approaches that would adopt numerous “generic” management prescriptions that have been applied on a regional basis in other conservation efforts, often on federally managed lands. These management prescriptions are discussed below in the context of two applications: (1) silvicultural applications; and (2) existing application of federal forest policies on private lands.

2.6.1.1 Silvicultural Applications

By definition, generic prescriptions do not take into account site-specific conditions. They are systematically applied regardless of the actual existence of a biological concern (or the cause of that concern), or the likely effectiveness of the prescription in a given area. Further, the burden imposed by the prescription can be greater than what is required to address targeted biological concerns or to mitigate the actual taking of listed species by the landowner. Generic management prescriptions often include blanket restrictions on certain silvicultural practices (for example, no clearcutting), and/or percent limits on harvesting within a set time period. All of these approaches are typically applied systematically across the landscape.

These types of prescriptions are not carried forward for detailed analysis as separate alternatives because they are not consistent with Simpson's management and productivity objectives, which are based on the unique growing conditions of the North Coast redwood region and on Simpson's ownership-wide and watershed-level approach to managing its timberlands. On the basis of the unique growing conditions of the local area and the long-term management approach implemented by Simpson, the continued use of even-aged regeneration tools are necessary to support Simpson's management and business objectives. Even-aged management is also key to implementation of other ownership-wide management templates, including Simpson's NSOHCP and achievement of maximum sustained production on Simpson's lands under the MSP Option (a) document.

Such generic prescriptions would also be inconsistent with Simpson's existing harvesting and management framework reflected in documents reviewed and approved pursuant to state statutes (see Sections 1.5 and 1.6). Further, absent the need to operate within this context, transitioning to another silvicultural regime, such as uneven-aged management, within the proposed timeframe of the ITP/ESP is impractical, infeasible and uneconomic because of numerous logistical and operational constraints, such as:

- **Reconfiguration and relocation of Simpson's entire road and skid trail network** – Uneven-aged management systems require placement and concentration of roads, skid trails corridors, and landings along the mid- and lower slope reaches within a watershed. (Even-aged management concentrates roads, yarding corridors, and landings on mid- and upper slope reaches.) Such an undertaking is impractical within the proposed timeframe of the ITP/ESP. Also, skid trails are generally wider than cable corridors for even-aged systems, and landings are generally larger to accommodate ground yarding of logs by skidders and bulldozers.
- **Species redistribution** – The conifers of primary economic value on Simpson's lands are coast redwood and Douglas-fir, which require substantial direct sunlight to grow rapidly at young ages. Even-aged silvicultural techniques are used to promote propagation of these species throughout the North Coast redwood region. Although the use of uneven-aged regeneration systems can be beneficial to many shade-tolerant species, such as western hemlock and white fir, these systems generally are less suited to the economically valuable redwood and Douglas-fir which grow at maximum rates when free to grow in full sunlight (Smith, 1962; USFS, 1973; Perry, 1994).
- **Product specialization** – Less opportunity exists to "manage" and promote individual tree diameter growth of selected species under uneven-aged management. Because diameter and species mix from harvested stands is more unpredictable under uneven-aged management, general product manufacturing and marketing is also more opportunistic in nature. The manufacture of the high-quality wood products that is the foundation of Simpson's current niche within the marketplace relies on a consistent redwood/Douglas-fir species mix within a narrowly defined diameter range that is difficult to "plan" for over the long-term under an uneven-aged management scenario.

Pursuant to federal Council of Environmental Quality guidelines, alternatives are to be reasonable, practical and feasible. Therefore, transitioning to another silvicultural regime, such as uneven-aged management, should not be carried forward for detailed analysis.

2.6.1.2 Application of Federal Forest Management Measures to Private Lands, Including the Simpson Ownership

Applying forest management measures used for federal lands to the lands owned by Simpson was considered but eliminated from further consideration in this EIS. Measures for managing federal forest lands are designed for lands that are subject to the operating guidelines and principles of federal land management agencies, such as the U.S. Forest Service and the Bureau of Land Management, and take into consideration the management and operational issues and mandates pertinent to those federal land managers. Such considerations in managing federal lands often emphasize recreational use and other passive and limited actions rather than commercial operations. For this reason, the federal management measures are not directly pertinent to privately owned lands or the uses of those private lands (in this case, timber harvesting operations by Simpson).

For example, the Northwest Forest Plan (NWFP) was developed for the U.S. Forest Service and Bureau of Land Management to address management objectives in lands in western Washington, Oregon, and northern California. In those areas covered by the NWFP, management prescriptions include interim fixed-width 300-foot, 150-foot, and 100-foot riparian no-cut buffers along either side of Class I, Class II, and Class III streams, respectively. (Riparian buffer widths and harvesting prescriptions may be adjusted on the basis of completed watershed analyses.) NWFP standards were developed to provide a wide range of benefits to many unlisted and listed species under federal multiple-use management principles.

NWFP standards and other available information were considered in developing Simpson's proposed AHCP/CCAA, and Simpson considers it unlikely that it would adopt more restrictive NWFP-like standards not already reflected in the Proposed Action or other action alternatives, based on economic operational considerations, its management objectives, and the number of species considered in the design of the NWFP standards for which Simpson is not seeking authorization for incidental take (e.g., the grizzly bear, Vaux's swift, and long-legged myotis). The NWFP requirements are intended to address statutory obligations of a federal agency, which exceed the standards (under Section 10(a) of the ESA) for authorizing incidental take of species on private lands.

As a result of the different management objectives of federal agencies and Simpson, use of the federal forest management measures on Simpson's lands would affect existing operations to the extent that areas currently available for timber harvesting would be precluded from approved operations. Approximately 94 percent of the timber resource that sustains Simpson Timber Company's California mills in Korbel, Orick, and Brainard originates from Simpson Resource Company lands within the Action Area. The large reductions in harvestable acreage that would result from implementing federal land management policies for forest lands could limit Simpson's ability to harvest minimum amounts of timber to the extent that Simpson Timber Company mills would not be sustained. Because Simpson Timber Company is the largest purchaser of Simpson Resource Company timber, the large reductions in harvestable acreage that likely would occur from implementing federal land management policies would adversely affect Simpson's ability to compete in the redwood and Douglas-fir market.

Application of federal forest management measures to Simpson's ownership would limit Simpson's competitive market position and potentially constrain continued regional economic vitality. Simpson employs more than 265 workers in Humboldt and Del Norte counties, and mills dependent on Simpson timber in the region employ approximately 410 people. By constraining Simpson's existing operations to an extent that limits its regional competitiveness, implementing the management prescriptions designed for federal lands could result in layoffs and contribute to regional unemployment.

2.6.2 Extensive Terrestrial Species Coverage

In addition to the species covered in the Proposed Action, the Services considered covering a large number of terrestrial species that are often associated with upland habitats during portions of their life histories (e.g., peregrine falcon and bank swallow). The Services did not carry this approach forward as an alternative for several reasons. Identifying terrestrial species as additional permit species in an HCP/CCAA would require developing species-specific, upland prescriptions. These would be in addition to those developed for the northern spotted owl in Simpson's NSOHCP and would extend beyond the riparian focus of the proposed AHCP/CCAA and the other action alternatives, and are therefore beyond the scope of this EIS. The marbled murrelet and bald eagle were included as covered species under Alternative C in this EIS because of the species' habitat requirements; survey results on Simpson lands and nearby parks suggest overlap with aquatic and riparian ecosystems (see Section 3.6.3).

2.6.3 Different Permit Term

As discussed in Section 2.2, *Proposed Action*, the federal action assessed in this EIS is the issuance of an ITP by NMFS and the issuance of an ESP by the USFWS to Simpson. The ITP would cover three listed fish ESUs and three unlisted fish ESUs. The USFWS action would cover one unlisted fish and two unlisted amphibians. The term of both permits would be 50 years. This permit term was selected because it generally corresponds to the rotation age of timber stands on the Simpson ownership.

A different permit term for the ITP/ESP assessed in this EIS (other than 50 years) was considered but not carried forward. Both a shorter term (to 25 years) and a longer term (to 75 years) were considered. A 25-year permit would not allow adequate time for the conservation measures to be implemented and assessed for effectiveness. Specifically, a shortened permit term would not allow for appropriate application and interpretation of site-specific prescriptions using the adaptive management and monitoring provisions of the proposed AHCP/CCAA. Conversely, if the permit term was 75 years, the data used to assess possible modifications to prescriptive measures would be outdated or invalid and, therefore, inadequate to rely on for decisions made so far into the future.

2.7 Comparison of Alternatives

Table 2.7-1 presents the five alternatives considered in detail in a comparative format. The table summarizes the differences in key management measures under each of the alternatives. In general, the comparison is geared toward how the key management measures of each alternative are similar to or different from the provisions of the other

alternatives. Many management activities will not differ by alternative (e.g., recreation), and are therefore not included in Table 2.7-1.

A comparison of the effects of each of the alternatives is presented in the Executive Summary section at the beginning of this EIS (Table ES-1).

2.8 Preferred Alternative

A Preferred Alternative was not identified in this Draft EIS. The Preferred Alternative will be identified in the Final EIS. A preferred alternative will be selected after the lead agencies have had the opportunity to review comments on the Draft EIS.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Federal ESA Compliance for Covered Species				
Federal ITP/ESP not issued. Subject to take prohibition of listed species, except the northern spotted owl under Simpson's 1992 NSOHCP.	Federal ITP/ESP issued. Implementation of an Aquatic HCP/CCAA.	Federal ITPs only issued. Implementation of an Aquatic HCP.	Same as Proposed Action.	Federal ITP only issued implementation of an HCP.
Covered Species				
N/A	Three listed fish ESUs, three unlisted fish ESUs, two unlisted fish species, and two unlisted amphibians.	Three listed fish ESUs only.	Same as Proposed Action.	Three listed fish ESUs, three unlisted fish ESUs, two unlisted fish species, one listed fish species, four unlisted amphibians, one unlisted reptile, and two listed bird species.
General Timber Harvesting and Forest Management Activities				
Harvesting and management as per the CFPRs and other applicable law, Simpson's NSOHCP, and Simpson operational policies and guidelines (with technical assistance from the Services, as appropriate).	Same as No Action, plus additional measures contained in the proposed AHCP/CCAA.	Same as No Action, plus additional measures contained in an AHCP.	Same as No Action, plus additional measures contained in an AHCP/CCAA.	Same as Proposed Action.
(Harvesting and Transporting Timber)				
Harvest scheduling pursuant to Simpson's "Option A" document.	Same as No Action.	Same as No Action.	Same as No Action.	Same as No Action, except for harvesting of isolated timber stands that are lower-value marbled murrelet habitat.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Harvesting limited to single-tree selection within WLPZs.	Same as No Action, except CFPRs augmented by additional measures for RMZs. See Riparian Habitat below for additional information.	Same as Proposed Action.	No harvesting within riparian buffers.	Same as Proposed Action.
Only uneven-aged management allowed within special management zones for steep inner gorge areas immediately upslope of Class I WLPZs.	Only single-tree selection and one harvesting entry for the term of the permit within headwall swales, deep-seated landslides, and “steep streamside slope management zones” (SMZs) immediately upslope of Class I and Class II RMZs. Within the SMZ, retain all hardwoods and leave conifer trees evenly distributed across the landscape where feasible. No-cut zones within the toe, and 25 feet upslope from the top of the toe of deep-seated landslides, except for purposes of creating cable-yarding corridors when other options are impractical. Similarly no-cut zones upslope of deep-seated landslide scarps so as to taper to the lateral margins of the scarp.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Log loading and hauling from October 15 to May 1 limited to roads with “stable operating surfaces.”	Loading and hauling of logs from October 15 through May 14 limited to roads with rock surfaces, except during dry fall and early spring periods under circumstances defined in the AHCP/CCAA. Use of landings within RMZs also not permitted during this period.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action, plus timber harvesting operations within the additional rain-on-snow areas are not allowed from November 15 through May 14 except for purposes of non-mechanized tree planting.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Use of roads during the winter period (October 15-May 1) not allowed where saturated soil conditions exist, where a stable logging road, landing, or skid trail does not exist, or when visibly turbid water from road/landing/skid trail surfaces may reach a watercourse or lake.	Same as No Action, except use of roads, landings, and skid trails additionally not allowed at any time of the year if such use results in runoff of waterborne sediment in amounts sufficient to cause a visible increase in turbidity in any ditch or road surface which drains into a Class I, II, or III water-course. Limit vehicular use on unrocked roads during the winter period to ATVs only.	Same as Proposed Action.	Same as No Action	Same as Proposed Action.
(Timber Stand Regeneration and Improvement)				
Site preparation activities pursuant to the CFPRs; incorporation of a site preparation addendum required with THPs. Other activities include tree planting, vegetation control and stand growth enhancement, pruning and cone collection, and fire prevention and suppression.	Same as No Action, plus implementation of various additional measures to minimize surface erosion from site preparation through minimization of bare soil exposure within harvest units, minimization of fireline construction, maintenance of a continuous forest floor layer of duff and woody material, and prevention of drainage failures and sediment delivery from firelines.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
(Road and Landing Construction, Reconstruction, and Maintenance)				
Construction, reconstruction, and maintenance activities pursuant to the CFPRs, implementation of best management practices (BMPs) based on techniques described in Weaver and Hagans(1994), and other Simpson operational policies and guidelines.	Same as No Action, plus implementation of additional measures (noted below) contained in Simpson's ownership-wide Road Management Plan.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Does not require road inventory.	Requires inventory of Simpson's road network every five years to ensure that management roads that are no longer needed for log transport or administrative access are changed to decommission status.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Provides for risk assessment methodology to identify and prioritize treatment of road-related sediment sources based on watershed sensitivity and basin resource issues (e.g. TMDLs), and proposed THP activity within the watershed.	Provides for risk assessment methodology to identify and prioritize treatment of road-related sediment sources over the entire ownership based on a process described in the AHCP/CCAA that utilizes results of aerial photos and field inventories. Requires subsequent development of an implementation plan to effect temporary or permanent road decommissioning, or road upgrading, as appropriate. Front load treatment of high- and moderate-risk sediment delivery sites (beginning in the high priority	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
	road work units) by providing for an average of \$2.5 million per year for the first 15 years (for a total of \$37.5 million) (The acceleration period would be adjusted following revision of the estimate of sediment yield from high- and moderate-risk sediment delivery sites at the end of the first five years following permit issuance. The acceleration period and monetary commitment could be adjusted (upward or downward) by up to 1.5 years and \$3.75 million depending on the revised estimate of sediment yield.)			
	Provides for treatment of all high- and moderate-risk sediment delivery sites by the end of the permit period.			
Pursuant to the CFPRs, road inspection and maintenance generally limited to THP operating areas and access roads.	Requires inspection and priority repair or maintenance of all mainline roads throughout the ownership once a year prior to the winter period.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Does not require maintenance of other management roads or roads yet to be decommissioned outside of THP operating areas.	Requires maintenance of other management roads or roads yet to be decommissioned throughout the ownership on a 3-year rotating basis in accordance with a schedule contained in the AHCP/CCAA.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Does not require a response plan to large storm events that could result in major sediment inputs to stream channels.	Requires a response plan to large storm events that could result in major sediment inputs to stream channels.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Requires installation of ditch relief culverts or construction of rolling dips at maximum spacing intervals ranging from 115 to 600 feet on the basis of "2 percent" stratifications of road gradient and associated soil erodibility ratings.	Same as No Action.	Same as No Action.	Same as No Action.	Same as No Action.
No specific requirements for enhanced surfacing of roads and landings used during the winter period.	Requires surfacing of roads and landings used during the winter period to a minimum compacted depth of 12 inches of pit run rock or a combination of pit run and crushed rock.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Requires installation of bridges on Class I watercourses where economically feasible; requires installation of countersunk or bottomless culverts where bridge installation is not possible.	Same as No Action.	Same as No Action.	Same as No Action.	Same as No Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
No minimum culvert size requirements for Class II watercourse crossings or logging road ditch drains.	Requires installation of culverts with a minimum diameter of 24 inches for Class II streams and 18 inches for logging road ditch drains. Requires design of <u>all</u> new stream crossing culverts to handle a 100-year return interval flow event and to minimize water diversion potential.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Requires seeding and mulching of (1) new road cut and fill slopes, (2) exposed slopes associated with temporary stream crossings, or (3) within the RMZ of Class I or II watercourses and Class III EEZs at a seeding rate of 30 lbs/acre and a mulching depth of 2 inches with 90 percent surface coverage.	Same as No Action.	Same as No Action.	Same as No Action.	Same as No Action.
Monitoring and Research				
Compliance and effectiveness monitoring, wildlife studies, environmental assessments, and watershed studies pursuant to existing regulations and Simpson's NSOHCP.	Same as No Action, plus various additional short- and long-term effectiveness monitoring programs as described in the AHCP/CCAA. Provides for adaptive management and structured feedback loops.	Same as Proposed Action, except that species-specific monitoring and research is limited to fish species only and does not include unlisted amphibians (tailed frog and southern torrent salamander).	Same as No Action.	Same as Proposed Action, plus establishes additional monitoring sites within rain-on-snow areas.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Riparian Habitat				
Management pursuant to the CFPRs and other applicable law, Simpson's NSOHCP, and Simpson operational policies and guidelines.	Same as No Action, plus additional measures contained in the proposed AHCP/CCAA. Some measures would supersede CFPRs.	Same as No Action, plus additional measures contained in an AHCP. Some measures would supersede CFPRs.	Same as No Action, plus additional measures contained in an AHCP/CCAA. Some measures would supersede CFPRs.	Same as Proposed Action.
(Riparian Zone Widths, Zone Stratifications, Buffer Areas)				
Class I WLPZ: at least 150 feet	Class I RMZ ^a : at least 150 feet	Same as Proposed Action.	Class I riparian buffer: 200 feet	Same as Proposed Action.
Class II WLPZ: 50-100 feet	Class II-1 RMZ ^b : at least 70 feet		Class II riparian buffer: 130 feet	
Class III ELZ: 25-50 feet	Class II-2 RMZ ^c : at least 100 feet		Class III ELZ: 25-50 feet	
Class III WLPZ designation possible under some circumstances.	Class III (Tier A) EEZ ^d : 30 feet Class III (Tier B) EEZ ^e : 50 feet			
Class I Inner Zone: 75 feet	Class I Inner Zone: 50-70 feet	Same as Proposed Action.	No inner/outer zone stratification within the riparian buffer.	Same as Proposed Action.
Class I Outer Zone: 75 feet	Class I Outer Zone: 80-100 feet			
	Class II Inner Zone: 30 feet			
	Class II Outer Zone: 40-70 feet			

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Plus: 25-50 foot special operating zone adjacent to (upslope) of a Class I WLPZs where even-aged management occurs; special management zone upslope of a Class I WLPZ inner gorge where slopes exceed 55 percent.	Establishes steep streamside slope management zones (SMZs) upslope of the RMZs along Class I and II watercourses where steep streamside slopes have been identified.	Same as Proposed Action	No special operating zone adjacent to the riparian buffer.	Same as Proposed Action.
(Class I Retention and Operational/Silvicultural Restrictions)				
75 percent surface cover and undisturbed area; single-tree selection; no use of heavy equipment except at prepared tractor and road crossings. Retention and protection of understory and mid-canopy trees within the 25-50 foot special operating zone; even-aged management prohibited in Class I special management zone where slopes exceed 55 percent.	Same as No Action, except SMZ protections supersede No Action restrictions within special operating/management zones. In addition: prohibit timber harvesting within RMZ "inner zones" that are located below designated SMZs, except for purposes of creating cable-yarding corridors when other options are impractical. In addition, no timber harvesting within the entire RMZ below an SMZ in the Coastal Klamath and Blue Creek HPAs; post-harvest conifer stem density of at least 15 stems per acre; greater than 16 inches dbh; no harvesting of trees likely to recruit to the watercourse; only a single harvest entry within the life of the permit.	Same as Proposed Action.	No harvesting or management within Class I riparian buffers.	Same as Proposed Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Inner Zone: at least 85 percent overstory canopy post-harvest; at least 25 percent of pre-harvest conifers; 10 largest dbh conifers per 330 feet of stream channel within first 50-foot width of zone; no salvage permitted.	Inner Zone: at least 85 percent overstory canopy closure post-harvest; no conifer removal if zone is predominately composed of hardwoods; no salvage permitted.	Same as Proposed Action.	No harvesting or management within Class I riparian buffers.	Same as Proposed Action.
Outer Zone: at least 70 percent overstory canopy post-harvest; no salvage permitted.	Outer Zone: at least 70 percent overstory canopy closure post-harvest; salvage permitted but limited to downed trees if they cannot be incorporated into the bankful channel, not contributing to bank/slope stability, or not intercepting sediment.	Same as Proposed Action.	No harvesting or management within Class I riparian buffers.	Same as Proposed Action.
(Class II Retention and Operational/Silvicultural Restrictions)				
75 percent surface cover and undisturbed area; single-tree selection only where more than 50 percent total canopy exists pre-harvest; no use of heavy equipment except at prepared tractor and road crossings. At least 70 percent minimum total canopy closure required where it exists within the WLPZ prior to timber harvesting.	Same as No Action, except SMZ protections supersede No Action restrictions within special operating/management zones. In addition: prohibit timber harvesting within RMZ "inner zones" that are located below designated SMZs, except for purposes of creating cable-yarding corridors when other options are impractical. In addition, no timber harvesting within the entire RMZ below an SMZ in the Coastal Klamath and Blue Creek HPAs; no harvesting of trees likely to recruit to the watercourse within the first 200 feet adjacent to a	Same as Proposed Action.	No harvesting or management within Class II riparian buffers.	Same as Proposed Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
50 percent to 70 percent total canopy closure (understory plus overstory) post-harvest; at least two living conifers per acre post-harvest measuring at least 16 inches dbh and 50 feet tall within 50 feet of the watercourse.	Class I RMZ; only a single harvest entry within the life of the permit. Inner Zone: at least 85 percent overstory canopy closure post-harvest; no salvage permitted. Outer Zone: at least 70 percent overstory canopy closure post-harvest; salvage permitted but limited to downed trees if they cannot be incorporated into the bankful channel, not contributing to bank/slope stability, or not intercepting sediment.	Same as Proposed Action.	No harvesting or management within Class II riparian buffers.	Same as Proposed Action.
(Class III Retention and Operational/Silvicultural Restrictions)				
Heavy equipment use limited; even-aged management allowed; retention of 50 percent of pre-harvest understory vegetation in the event a WLPZ is designated; retention of all trees within the Class III channel or that are needed for bank stability.	Same as No Action. Possible Class III WLPZ designation superseded by the following: Tier A (< 60-70 percent slopes): retention of all LWD on the ground; fire ignition during site preparation prohibited. Tier B: (> 60-70 percent slopes): all hardwoods and non-merchantable trees retained; conifers retained that contribute to bank stability or that act as a control point in the channel; post-harvest retention of at least one conifer per 50 feet of stream length; fire ignition during site preparation prohibited.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Large Woody Debris				
LWD sources: see Riparian Habitat above.	LWD sources: see Riparian Habitat above.	LWD sources: see Riparian Habitat above.	LWD sources: see Riparian Habitat above.	LWD sources: see Riparian Habitat above.
Site Preparation and Burning in Riparian Buffers				
Prohibits mechanical site preparation in Class I or Class II WLPZs by wheeled or tracked equipment.	Prohibits mechanical site preparation in Class I or Class II RMZs by wheeled or tracked equipment.	Same as Proposed Action.	Prohibits mechanical site preparation in Class I and Class II riparian buffers by wheeled or tracked equipment.	Same as Proposed Action.
Prohibits fire ignition within Class I or II WLPZs, as well as Class III ELZs.	Prohibits fire ignition within Class I or II RMZs, as well as Class III EEZs.	Same as Proposed Action.	Prohibits fire ignition within Class I or II riparian buffers, as well as Class III ELZs.	Same as Proposed Action.
Snags				
Retains all snags greater than 16 inches dbh and 50 feet tall that do not pose a safety or fire hazard. Future recruitment would occur through retention of old-growth elements in the 39 NSO set asides areas, minimum overstory canopy and conifer tree stem retention noted above within WLPZs, and natural mortality elsewhere throughout the Action Area.	Retains all snags greater than 16 inches dbh and 50 feet tall that do not pose a safety or fire hazard. Future recruitment would occur through retention of old-growth elements in the 39 NSO set asides areas, minimum overstory canopy and conifer tree stem retention noted above within RMZs and Tier B Class III EEZs, and natural mortality elsewhere throughout the Action Area.	Same as Proposed Action.	Retains all snags greater than 16 inches dbh and 50 feet tall that do not pose a safety or fire hazard. Future recruitment would occur through retention of old-growth elements in the 39 NSO set asides areas, and natural mortality within riparian buffers and elsewhere throughout the ownership.	Same as Proposed Action, except for the potential loss of snags associated with implementation of species-specific conservation measures for the marbled murrelet.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Hardwoods				
In general, retains all hardwoods in uneven-aged areas, except where removal would enable conifer regeneration, enhance riparian function, establish cable corridors, or for safety. One to two trees per acre would be retained in even-aged management units. Hardwood removal also subject to other retention standards noted above.	Same as No Action, except also requires retaining all hardwoods within SMZs.	Same as Proposed Action.	Same as No Action.	Same as Proposed Action.
Listed Species				
Subject to take prohibition for all listed species; incidental take allowed for the spotted owl pursuant to previous authorization.	Allows take of covered species, provided incidental to a covered activity, through implementation of general forest management, riparian habitat, large woody debris, and snag measures noted above. Subject to take prohibition for other listed species.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action. Incidental take of the marbled murrelet and bald eagle authorized pursuant to implementation of additional conservation measures specific to these species.

TABLE 2.7-1
Description of Alternatives

No Action (No HCP/No Permit)	Proposed Action (Simpson AHCP/CCAA)	Alternative A (Listed Species Only)	Alternative B (Simplified Prescriptions)	Alternative C (Expanded Species and Geographical Coverage)
Unlisted Species				
Avoids and minimizes significant impacts to unlisted species.	Provides assurances for covered, unlisted species that have either been proposed for listing or are considered to be sensitive. Allows take of these species (provided incidental to a covered activity) in the event they become listed in the future through implementation of the general forest management, riparian habitat, large woody debris, and snag measures noted above. Avoids and minimizes significant impacts to unlisted species that are not covered. (Same as No Action for these species.)	Same as No Action.	Same as Proposed Action.	Same as Proposed Action, plus requires implementation of species-specific conservation measures for the western pond turtle.

^a Includes floodplains and channel migration zones (CMZs).

^b Would apply to the first 1,000-foot segment of the smallest (first order) Class II stream.

^c Would apply to remaining portions of first order Class streams, as well as to larger Class II streams (second order and higher).

^d Where streamside slope gradients are less than 60 percent to 70 percent.

^e Where streamside slope gradients are greater than 60 percent to 70 percent.